AV COMMUNICATION REVIEW

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Wesley C. Meierhenry — Enriching the Curriculum Through Motion Pictures

John Moldstad — Readability Formulas and Film Grade-Placement

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Original manuscripts, books for review, and editorial communications should be sent to the Editor: WILLIAM H. ALLEN, Bureau of Audio-Visual Instruction, University of Wisconsin, 1312 W. Johnson Street, Madison 6, Wisconsin.

Subscriptions and business communications should be sent to: ANNA L. HYER, Managing Editor, Department of Audio-Visual Instruction, National Education Association, 1201 16th Street, N. W., Washington 6, D. C.

WHAT CAN YOU DO ABOUT EDUCATIONAL TELEVISION?

•HARRY J. SKORNIA

Here is a warning that educational TV channels may be lost as a national source for enlightenment unless immediate and forceful action is taken.

Harry J. Skornia is executive director of the National Association of Educational Broadcasters.

I HAVE an idea that many contributors to professional journals like this one leave many things unsaid on the assumption that their readers, their colleagues, already know them. Why "carry coals to Newcastle"? To avoid appearing intellectually incestuous or inbred we, therefore, frequently avoid the obvious, however crucial it might be.

Educational television, for example, is in danger today. Every educator should be defending the right of education to at least test it. We should all be convincing as many fellow-citizens as possible that the frequencies reserved for educational television must not be allowed to slip away on the basis of any decisions taken in ignorance, or before the possibilities of this medium for education are fully explored.

Yet how active are you as a disciple for this new medium? How seriously are we all, individually, taking our responsibility as educators to seize every opportunity to promote understanding of this new medium and a new conception of its use?

How articulate are we when *given* an opportunity to talk? How well-prepared are we to answer honest questions and refute false statements? How conscientiously are we making sure that no one can ever say of us as educators: "He certainly doesn't seem to care" or "There's one person who is certainly playing it safe"?

It is in the hope that it may provide the rest of you, as col-

leagues, some encouragement and ideas for making your voices heard in an increasingly articulate roar, that I present one statement, as I see it, of the case for educational television and the way it must be presented to honest citizens. I hope it, or parts of it, may be useful as ammunition and background in the crusade we must all wage if education's right to refuse to be condemned to the use of antiquated instruments is to be established once and for all.

Fairly adequate publicity has been given to the crisis which education now faces. This is true because the situation is desperate. Virtually every parent has felt or will feel its pinch. Twenty-six billion dollars are needed for schoolrooms and buildings during the next six years. The need for teachers is at least as great. Each look at population statistics, as compared to facilities, results in even more drastic revisions of estimated needs.

Much of the thinking that is going into the solution of this problem, however, appears to be in at least 40-year old terms. Because it is new, television has not yet come to be considered as a natural, necessary, or integral part of the solution to the problem. One reason is that in America television is increasingly coming to be thought of as a medium belonging to the salesman. Unless this conception is carefully looked at before the pattern is established, this situation may become permanent.

Yet television is the one new instrument we have which is likely to be able to contribute significantly to the solution of the present crisis. The Federal Communications Commission, in April of 1952, set aside television channels specifically for this purpose. Unfortunately educational television (by which we mean specifically educational stations on these specifically allocated frequencies) seems now in danger of being stifled in the cradle. *Broadcasting-Telecasting* magazine of June 21, 1954 says:

> If there is a scarcity of VHF channels, as everyone admits, and if educational television development has fallen hopelessly behind the educators' expectations, as can be proved, the Commission can no longer postpone consideration of the causes and effects of its reservation of 251 channels for noncommercial, educational television . . . . It is not an impressive record that has been made by educational television in the two years since the FCC ordered the educational reservations, and there is no promise of improvement . . . . If the public interest is truly to be served, as the FCC is charged to do by the law, the reservations must be withdrawn.

In Illinois a suit has been filed in a county court to prevent the University from using any state funds for educational television. A vote was held in November in Wisconsin, forced (prematurely)

by opponents of educational television, and has revealed how much remains to be done before taxpayers believe we need educational television or fully understand what is at stake. A Los Angeles educational television station has already been forced to close down, at least temporarily, for lack of funds. Across the nation this public resource and instrument of education seems in danger of slipping away from education and free public use before it is even adequately publicized or understood.

This in the face of the fact that television seems destined to dwarf all other media of mass communications in its impact. Television is in fact likely to assume an importance second only to the printed page—in some respects even greater. For it can itself use or transmit the products and accumulation of virtually all other media.

In television, society has a force capable of shaping the mass mind more effectively and economically than any other instrument now available. The sense of reality, which television provides, results in the viewer's feeling a closer relationship to what is viewed than with what is conveyed by any other means of communication.

But if the full potential of television for good, and in the education crisis, is to be realized, something besides the traditional mass appeal and commercial influence must be allowed to work. Left solely to commercial operators, television is likely never to be able to reveal what it can really do in and for enlightenment and understanding, as well as entertainment. Let us hope that no Hitler or Mussolini needs to come along to use it before we realize how terrible and awesome is its potential propaganda or educational power.

If we fail to understand television and its meaning to education, we do so at our own peril. We shall leave to history and posterity to judge those educators, or boards, or legislators, who oppose or kill or ignore it, through lack of foresight or courage, or through apathy. For these people, like us, have a responsibility, transcending considerations of schoolrooms, books, desks, "and more of the same" details only. That responsibility involves the need to consider a genuinely new approach, use of new tools and techniques as called for by the desperate needs now crying for solution. It involves consideration of a second television service for the United States, complementary to the present commercial service and as separate from it as the audio-visual division is from the corner movie house, or the public library from the lending library or book store. Even though they may be minorities, people who would like from tele-

vision things which won't sell products or attract commercial sponsorship should be entitled to have them, if they can do so without depriving commercial listeners of what *they* want.

This belief is intended in no way to be a reflection on either the good intentions or the legitimacy of commercial television. In fact the commercial television industry, saddled with the whole gamut of responsibilities which hundreds of people and groups have seen for it, has often been excessively and wrongly harrassed. Being a mass communications medium, commercial television can't afford small minorities. It cannot undertake the nonpaying job which education has always constituted, on the scale which education now needs. The best educational job that can be done by the most conscientious commercial station will be sporadic, infrequent, and presented in a watered-down mass appeal fashion which is too thin a broth for the genuine educational needs of an atomic age.

Many groups have suggested that education does not need its own facilities. This reminds us of the day when armories, movie theaters, lodge halls, and other such empty buildings were suggested for school use. Even if education were able to purchase adequate time to do even a fraction of the job needing doing, the cost would soon approach the cost to the college or school of acquiring and operating its own transmitter. There is no sensible or satisfactory alternative to education's having its own facilities.

However, commercial stations can't even afford to *sell* their class A time for educational programs at their most desirable times of day, since these (traditionally "dull") educational programs are likely to drive listeners elsewhere. Surely education is as entitled to have this instrument as its own as is private enterprise. And surely education shouldn't have to put on commercial packaging to justify itself.

Yet there is some justice in the questions being raised about whether or not education is going to use those frequencies set aside for it. The sort of quotation given earlier in this article deserves honest rather than angry answers.

One of the answers is to be found in history. An adequate public library system was not developed in the United States, even with the assistance of Andrew Carnegie, in any short period of time. National forests and parks were not greatly used for many years after they were set aside as sacred from the woodman's ax. Securing television stations is not an everyday affair for schools, colleges, and cultural groups. It involves elections, tax levies, leg-

islative sessions (which are frequently on only a biennial basis), legal and technical services, and hundreds of other delaying factors. Public and community projects of a nonprofit nature cannot traditionally move with either the decisiveness or the speed of private enterprise.

Unfortunately the result is that of the 257 channels now set aside for educational television there are only 48 applications which have been filed and only 35 construction permits granted, for you can't file or get a construction permit until you have the money for both the initial outlay and later operational costs. The end of this year will see the 12 stations now on the air joined by probably not more than 10 more. The initial cost of building a station generally runs from a quarter to a half a million dollars. Annual operating budgets, if they are to be adequate, should be at least $200,000 per year. This represents, for an average state, the cost of one package of gum per year per citizen, or the cost of one package of cigarettes per year per adult smoker. This highway to men's minds can be built in the average state for the cost of one mile of concrete highway for the transportation of men's bodies.

A station could be built on every one of the 257 channels reserved for education in the United States (allowing a generous half million dollars for each) for $125 million. *All* these stations could be operated annually at $250,000 each, or for $63 million a year—a drop in the bucket compared to the funds going every year into educational buildings, books, and other supplies—or into virtually any commodity used in the United States. This is in no sense to be interpreted as opposition to recognition of the traditionally recognized needs for teachers, salaries, and buildings, but unless educational frequencies are used for education promptly, ominous warnings from many sources, including the Federal Communications Commission, indicate that they will soon be gone forever. Somehow, among the pressures for daily needs for more of what we already have, we must find time to consider *new* solutions as well.

The 257 channels reserved for educational television are more than education dared hope for. Getting stations on each is only a dream—no one would dare hope for 100 percent realization. Yet the cost of building *all* these stations would be no more than the budget for the building program of any one of several of our largest universities or school systems. And the annual combined cost of operation of all 257 of these stations would be less than one year's

budget of one tax-supported midwest university alone. The Los Angeles station, which recently closed, could have been saved, and can still be salvaged, by a contribution from each citizen in the Los Angeles area of the cost of one 3c postage stamp.

Television can buttress the classroom and formal education generally as the library does. However, reading assignments will not be limited by the number of books available. United Nations meetings, national party conventions, legislative and committee hearings, atomic explosions, speeches by the heads of state around the world, and other current political, social, economic, and cultural events may be presented (given a system not based on commercials) at times when people can best use them. Once the schools are tooled to television, television recordings will be found to be faster and less expensive to produce than present-type films. By enabling teachers to cover certain aspects of their work in a mass manner, these same teachers will be freed for more individual work with students. Master teachers, via television, can also help increase the teaching efficiency of present teachers. More, rather than less, classroom situations of an intimate nature will be possible.

The unbelievably fast-growing demand for adult education can be more adequately satisfied if adequate tools are found. The disgraceful record of America in which 30 percent of the electorate is generally found to be unaware of almost any event in American foreign affairs and 45 percent of the electorate cannot be considered well-informed on any national problem, leaves room for great improvement. Surely the present 25 percent only of the electorate, which now seems adequately informed about the most important items affecting America, can be greatly improved upon.

Communication has become one of the greatest problems of modern society. It is to ideas what highways are to automobiles. Millions of mistakes, misunderstandings, human tragedies, deaths, and crimes occur annually because of failure to have the right knowledge or information or understanding at the right place at the right time. Like the costs of other idea-delivery facilities such as books and films, the cost of television as an economically justifiable expense must be recognized as a legitimate instructional tool requiring regular budgeting and financing. It should not have to depend on drives, appeals, and other external approaches, as if it were illegitimate, for unless the products of our research and

educational processes are *delivered,* they will serve no useful purpose.

Many citizens who are not adequately informed on the meaning of educational television may well ask what it will provide that commercial television does not offer. One of the best ways to answer this question is to cite some of the criteria used by those educational television stations already on the air. Here are a few samples of such criteria:

1. Is the service or program under consideration not available on commercial television, or available only at an inconvenient time?
2. Does it draw forth from viewers the highest intellectual and cultural response of which each is capable?
3. Does it avoid slanting or bias in favor of any one group?
4. Will it enrich lives and broaden horizons?
5. Will it help to create new interests and activities?
6. Does it assist people to know themselves, to understand the complex world, and to learn to work better with others?
7. Does it provide opportunities for training individuals in acquiring better skills for better living?

Another indication of what can be done is to be found in program samples. Since education's survival is not expected to depend on the extent to which it can "pack 'em in," educational television can specialize far more than commercial television, using the rifle instead of the shotgun approach. Treatment in depth finally becomes possible, for many problems—something which commercial television can not normally afford. One series which most of these stations are carrying, as produced by one of the great universities, is on *American Political Parties.* Another, on archeology, is entitled *Here Is the Past.* Others include: *Industry On Parade, Understanding the Child, From the Mind of Man, Poetry Workshop, Causes of War, Great Ideas, Today's Farm, Driver Education, Home Nursing, Electricity at Work, Frontiers of the Sea, Marriage Problems, Assignment in India, University Forum, Great Books, Talk o' the Teens,* and *Upgrading Ourselves.* Exchange programs are planned with England, Canada, and other nations, as have already been carried on for several years by radio by the NAEB and its member stations in the United States, whose fine programs, providing a supplementary service to millions of Americans, are already a matter of record and a source of pride to American education.

Commercial stations simply cannot set aside on a permanent

basis that airtime which is essential for systematic programing during extended periods of time as required by a continuing educational process. Neither can they generally match the efforts an educational television station will make to offer children's programs consistent with the best standards of teaching and character development, as well as wholesome entertainment.

There is nothing peculiarly insidious about either the ink or the drawing techniques used for what we now call comics or movies. It is the *use* and the standards which have come to be accepted for these media which are responsible for the criticism most people now voice for these media in general and their effect on children. An experimental, developing effort in the area of children's programs, such as grows legitimately out of the educational process and the schools, can insure against this happening in television. But this insurance can be valid only if somewhere in America there can be a television service freed from the pressure of providing a given number of box tops, rather than healthy children's minds and interests, as evidence of success.

Radio has been with us for over 30 years. Yet never did opposition to commercials so crystallize as with the advent of television. Attachments (such as "Blab-off") are now sold, enabling viewers to switch off these commercials. America seems ready for an alternative service.

Television around the world has provided most nations opportunity for re-examining the financial support, the system of control, and the economic and educational uses of the medium. Such a step needs taking in America as well before that modest 12 percent of the television air which is reserved for nonprofit use is lost forever.

For the loss of education's television frequencies will be a loss not only to the schools of America at a time when they are already in serious trouble, but to every parent, child, and citizen.

ENRICHING THE CURRICULUM THROUGH MOTION PICTURES

•WESLEY C. MEIERHENRY

At a time when educators are seeking help in solving some of the crises in education, the research carried out with curriculum enrichment by films in Nebraska is particularly pertinent. It represents the first full-scale attempt to discover the values of motion pictures in enriching the school program under a variety of conditions; and it foreshadows, perhaps, a curriculum in which films may play a more integral role in instruction. Wesley C. Meierhenry is associate professor of the history and principles of education and school administration at the University of Nebraska. He was program administrator of The Nebraska Program of Educational Enrichment Through the Use of Motion Pictures.

THE NEBRASKA Program of Educational Enrichment Through the Use of Motion Pictures began in 1946 in response to the question of how worthwhile sound motion pictures were in developing learning experience. Certain evidence had been accumulating as a result of many research studies of one type or another extending over a quarter century. The war just terminated had produced many highly enthusiastic converts to this type of medium. All in all the experimental and empirical evidence seemed quite convincing. Yet there were those who wished to know what would happen if the types of motion pictures currently available were used in regular school situations with the regular teachers during a complete school year of nine months.

ENRICHMENT DEFINED

Accordingly, an experiment was developed which would explore the enrichment possibilities of the motion picture. Enrichment was defined as follows:

1. The extent to which existing courses could be vitalized through the use of motion pictures

2. The extent to which important information not now provided could be supplied through the use of motion pictures.

In addition, there was the plan to study the effects of certain types of motion pictures used in a large group or convocation setting. Certain other factors such as school size, class size, teacher preparation, teacher experience, a special course in audio-visual materials, and the intelligence of the students, were examined in relationship to enrichment when motion pictures were used.

FINANCIAL SUPPORT FOR THE EXPERIMENT

In support of this project, the Carnegie Corporation of New York made grants of $53,400 over a four-year period. Teaching Film Custodians made available without charge prints of any of its titles selected for use in the study. In addition, TFC provided funds in the amount of $10,857.44 over the four-year period for the purchase or rental of motion pictures selected from the other major producers of instructional film. Encyclopaedia Britannica Films, Coronet Instructional Films, March of Time Forum Edition, Young American Films, Brandon Films, and Carl Mahnke Productions each agreed to make available any titles selected for inclusion in the experimental program on a loan basis at approximately print cost.

SCOPE OF THE STUDY

Seventy different Nebraska high schools were directly associated with the experiment for one or more years, from 1946 through 1950. There were 29, 33, 29, and 29 schools which participated in the program each of the four years respectively. There were 4003, 5403, 4211, and 3157 students for each of the years, respectively, or a total population of 16,774. For each of the four years respectively, 287, 342, 371, and 325 teachers were directly involved in using the motion pictures in their classes.

CURRICULUM AREAS EXPLORED

The experiment was conducted in general science, biology, and physics in the science area and in world geography, world history, American history, and modern problems in the social studies area. Motion pictures were selected for convocation showing to introduce subjectmatter which because of its newness was not yet included in the regular classes or to highlight certain types of information essential for each student. An example of the first type would be the United Nations; an example of the latter would be safety education.

SELECTION OF THE MOTION PICTURES

Twelve to 15 motion pictures were selected for each of the subjectmatter areas listed above. The motion pictures were selected so that they contributed to the enrichment purposes.

1. The motion pictures had to evidence potential for contributing desirable facts, understandings, and skills that were not conveniently available to the instructors of these classes

2. The motion pictures had to be of such a nature that they could be integrated into the courses chosen for experimentation.

Experimental classes, in which the selected motion pictures were used, and control classes in which no motion pictures were to be shown, were designated in the schools associated with the experiment. Instructors were encouraged to use all other types of audiovisual materials in both experimental and control sections. In about one-half of the schools a class, for instance American history, would be designated an experimental section and in the other half of the schools it would be considered a control section.

SELECTION AND PREPARATION OF THE TESTS

Two types of tests were used to measure the two aspects of enrichment as defined in this study. National standardized subjectmatter tests measured the effect which the use of motion pictures had on achievement in the usual subjectmatter. So-called film tests were used in each subject to measure the effect which the motion pictures had on presenting new and supplementary learning experiences which otherwise would have been difficult or impossible to provide. These tests were prepared locally, and were based on the content of the selected motion pictures for the subject.

The standardized and film tests were administered in both experimental and control classes at the beginning of the schoolyear. In the experimental classes there followed the use of the selected motion pictures at the appropriate time to accomplish maximum integration. At the conclusion of the schoolyear the same tests were again administered to both the experimental and control sections.

THE RESULTS[1]

General Science

In all of the four years the film tests showed a highly significant gain[2] by the students in the experimental classes. A significant

[1] For a full account of the experimental study including the results see *Enriching the Curriculum Through Motion Pictures*, Wesley C. Meierhenry, editor, University of Nebraska Press, Lincoln, 1952.

[2] The 1 percent level of confidence was selected as the level to be reached for the results to be considered significant.

gain was made by the students in tre expermental classes in one of the four years on the standardized test. The control sections were superior during the other three years, although one advantage was slight and none of the advantages were significant.

Biology

A highly significant gain was registered by the experimental group on the film test during the three years motion pictures were used in biology. The experimental group achieved at a significantly higher level one of the three years on the standardized test. The other two years the gains were insignificant, one year favoring the experimental group and the other favoring the control group.

Physics

The experimental group scored significantly higher all four years on the film test. In none of the four years did the standardized test results significantly favor either the experimental or control group. During two of the four years the advantage was with the experimental groups and during two of the years it was with the control groups.

World Geography

World geography was included as a part of the experiment during only the first year. The results of the film test favored the experimental group at the 1 percent level. No standardized test was available the first year, nor did one become available. It was for this reason that world geography was dropped from further study.

World History

World history was a subject of experimentation three of the four years. When it was found that certain motion pictures considered appropriate for this subject would not be available for use during the second year of the experiments, world history was dropped for that period.

The experimental groups were highly superior to the control groups each of the three years on the film tests. On the standardized test, there was no particular difference in favor of either group, although two of the three years there was an insignificant advantage in the direction of the experimental group.

American History

American history was utilized as an experimental subject three of the four years. Significant gains were made by the experimental

groups each of the three years on each of the two types of tests employed.

Modern Problems

Modern problems was introduced as an experimental subject during the second year of the study and was studied during the third and fourth years as well. The film tests again disclosed significant gains for the experimental groups on the types of gains which they measured. The standardized tests showed no significant gains for either group although the experimental groups were slightly superior two out of the three years.

Convocation

The first two years the two groups of motion pictures were shown to the entire student body in those schools designated as experimental schools for convocation purposes. The motion pictures dealt with such topics as music appreciation, social refinement, guidance, conservation, and safety education. Only film tests were used and the results indicated highly significant gains for the experimental schools.

United Nations Convocation

During the third year of the study it was decided to have the convocation program deal with the United Nations and the development of international understandings. The purpose of this series of convocation motion pictures was as follows:

1. To determine the nature of any changes in the beliefs of the students toward the United Nations
2. To investigate the extent to which factual information about the United Nations could be provided.

A belief scale and a factual test were both developed locally. The belief scale consisted of 51 statements to which seven reactions were possible varying from "strongly agree" to "strongly disagree." The factual test of 52 items was designed to measure objective information about the UN.

Two types of summaries were made covering the responses on the belief scale. One summary covered the total gains of the experimental and control groups on all 51 items. The other was an item by item analysis for each of the two groups.

The over-all summary gave a significant advantage to the experimental group. The item analysis disclosed that on approximately one-half of the statements the experimental and control groups responded similarly on the pretests and significantly differ-

ently on the posttests. The advantages were in favor of the experimental groups and in harmony with the points of view presented by the motion pictures. On the other one-half of the items there was not complete agreement on the part of the experimental and control groups on the pretests. On the posttest the groups were very dissimilar, the changes having been made by the experimental group.

The factual test disclosed significant gains for the experimental group.

School Size

At the time the experiment was being planned there was some feeling that the effect of using motion pictures might be most pronounced in small schools. Accordingly, schools of various sizes were included in the experiment and were grouped as follows:

1. Secondary schools of 100 or fewer students
2. Secondary schools of 101 to 200 students
3. Secondary schools of 201 or more students.

The summaries for each of the subjects in which experimentation was conducted disclosed no consistent relationship between school size and gains in the classes in which motion pictures were used. The schools of 101-200 enrollment appeared more frequently with a significant difference, however, while in no instance was the group of schools with the smallest enrollment superior.

These results would seem to indicate that the motion pictures produced slightly greater achievement in that size unit which is likely to possess a certain minimum of teaching facilities but which is still small enough to permit a rather higher degree of individualization.

Teacher Education

Since there is a tendency to place considerable stress on teacher preparation in salary schedules, which would seem to be based on the assumption that there is increased teaching effectiveness resulting from additional education, the factor of teaching preparation was studied in relation to gains when motion pictures were used.

Classes in each of the subjects were placed in three categories according to the preparation of their teachers. The results indicate that there was no distinct pattern evident between the amount of education of the teachers and gains in the experimental classes.

Teacher Experience

The experimental classes were again divided into three groups, this time on the basis of teacher experience. The diverse results in-

dicated that for the variable of teacher experience no general conclusion could be drawn. Classes taught by the teachers with the longest experience did show the smallest gains with the one exception of the experimental classes in modern problems.

Class Size

In order to discover if there was any difference in achievement when motion pictures were used in classes of varying sizes, an arbitrary assignment of experimental classes was made according to the following categories:

1. Classes of 15 students or less
2. Classes of 16 to 30 students
3. Classes of 31 students or more.

In general, motion pictures appeared to contribute more to achievement in larger classes than in the classes of 15 or less students. Those students in the smallest classes did not rank higher than either of the other two class-size groupings in any of the subjects.

Special Course in Audio-Visual Materials

The experimental classes taught by those teachers with some type of preparation in the utilization of audio-visual materials were compared with those classes taught by teachers without special preparation. There was some variation in the types of special audio-visual preparation, ranging from one to three semester-hour classes or workshops. The inservice activities provided in each experimental school were not considered as special preparation.

The summaries on this variable revealed no significant difference.

Intelligence

An intelligence test was administered to all the students in the experimental schools in one year. The test was one which gave verbal and nonverbal quotients in addition to an over-all measure of intelligence.

After a complete summary of the standardized and film test scores were related to intelligence scores, the conclusion was reached that bright students profit more from the use of motion pictures in their classes than do dull students. Thus motion pictures seem to fall into much the same category as other learning materials which are generally more profitably used with able students than with those of less ability.

Comparisons made between the language and nonlanguage scores on the intelligence tests and the gains when motion pictures were used revealed similar results. Apparently motion pictures appeal equally to individuals who possess one or the other of these types of abilities.

Other Findings

Much progress was made during the four years in the development of a state-wide audio-visual program. Motion picture libraries were established in five additional publicly supported teacher-education institutions in the state. The number of institutions, both public and private, which gave attention to the development of preservice and inservice activities in the audio-visual field increased greatly.

CONCLUSION

The use of the motion pictures in the various classes was unquestionably worthwhile and profitable to the respective students. The advantages to these students becomes clearer when one recalls that there was a significant gain on every single film test; and further, that about one-sixth of the entire instructional time in the experimental classes was given over to the use of motion pictures. In spite of this time allocation, there were many gains for the experimental classes on the standardized tests, some of them significantly so, and not one single instance of a significant loss. Thus did the Nebraska Program of Educational Enrichment Through the Use of Motion Pictures document the case for the use of films in selected areas of the secondary curriculum.

READABILITY FORMULAS AND FILM GRADE-PLACEMENT

•JOHN MOLDSTAD

In their review of instructional film research, Hoban and van Ormer point out that only recently has the "rhetoric" of the film been systematically investigated, as current research programs are attempting to discover the "variables or definable processes which increase the instructional effectiveness of films so that better films can be produced and better use can be made of them." This study contributes some further evidence on the problem of film "rhetoric." John Moldstad is instructor in education and research associate in the Audio-Visual Center at Indiana University.

THE RECENT production of numerous educational films in almost every content area has focused increasing attention on film selection. Until the last few years, teachers in many academic areas have used relatively few films either because they were not available or because those available just didn't seem to fit the needs of the teacher and her students. Today many of these same teachers are finding that films are available which deal specifically with a great many of the topics and problems they investigate in their courses. Whereas in the past, the teacher's problem frequently had been one of using or rejecting one film that was somewhat related to the topic under consideration, she now must often decide which one of several films treating the same topic with slightly different approaches can best help her accomplish her teaching objectives. Audio-visual administrators and teachers are beginning to realize that the problem of judicious film selection has become an increasingly difficult one.

Dale, Hoban, Kinder, Wittich, and Schuller—to mention only a few—have developed criteria of help to teachers in making subjective evaluations of films. At present, we have no objective formulas or scales for use in selecting and grade-placing instructional films.

This same situation was true in regard to textbook selection until a few years ago. As early as 1923, reading specialists were developing various readability formulas which they hoped would make it possible to calculate the approximate reading difficulty of textbooks and other written materials under consideration. Within the last decade, Lorge (7), Flesch (4), and Dale and Chall (3) have succeeded in simplifying this technique so that now teachers can quickly obtain an index of the difficulty of textbooks they may wish to use with their students.

As educators acquired a fuller appreciation of the importance of listening in the educative process, greater attention was directed to studies investigating the relative effectiveness of auditory and visual modes on the comprehension of factual material.

Goldstein summarized results of a majority of these studies conducted from 1917-1940 and then conducted a carefully controlled experiment in which he eliminated many of the inadequacies of the early researches. As a result of his findings, he made the following generalizations:

> Relative superiority of listening comprehension diminishes with increasing difficulty of material. The easier the material, the relatively more effective is auditory presentation. Other things being equal, the learning medium used in a given situation should depend upon the level of difficulty of the material. For easy materials, listening may prove advantageous for comprehension. For difficult material, it does not matter particularly which mode is chosen. It should be kept in mind that the difference between reading and listening comprehension, although statistically reliable, is not sufficient to outweigh other pedagogical or practical considerations (6:57-58).

Chall and Dial (2) attempted to find out whether readability formulas could be used widely for estimating the listening difficulties of radio programs. Using 18 newscripts of various readability difficulty levels with 100 college freshmen, they found that the Flesch and Dale-Chall predictions were good estimates of listening difficulty but tempered their conclusions with the caution that neither of these formulas has perfect prediction even for reading.

Rudolf Flesch believes his "Reading Ease" formula is applicable to either written or spoken words. He points out, however, that experiments indicate that what is hard to read is even harder to understand by listening, and what is easy to read is easier to understand by listening. Therefore, in a sense, he feels his formula works even better for speaking than for writing (5:43).

On the basis of this and other similar evidence, readibility

formulas have received considerable acceptance and use by both educational and commercial broadcasters.

If readability formulas seem to be of assistance in estimating the listenability difficulty of radio programs, why not use them to grade-place instructional films? Or does the fact that the audio and the visual elements are interacting to influence the total learning situation preclude use of these formulas which estimate only the difficulty of the film narration? Before we can judge how valuable readibility formulas can be in film grade-placement, we must first find out what relationship, if any, exists between listenability difficulty levels of film narration and total film effectiveness in facilitating learning.

The first purpose of this study (8) was to investigate the relative effectiveness of film narrations of simple, medium, and difficult listenability levels on the learning of science information and vocabulary. The types of learnings included understandings of specific science terms as well as facts and principles related to the growth cycle of the pea plant, a representative green flowering plant. A second purpose was to find out whether narrations which utilized a greater number of difficult, nonscientific words resulted in a significantly greater vocabulary growth than those which contained only a few difficult words.

FILM DEVELOPMENT

Life of a Plant, a 16mm sound, color motion picture produced by Encyclopaedia Britannica Films, was selected for use in the experiment. The listenability difficulty level of the original narration of the film was analyzed by means of the Dale-Chall readability formula and was found to be approximately upper seventh-grade difficulty. Using this narration as a guide, the writer developed two additional narrations containing essentially the same material—one with a listenability difficulty level of approximately middle fifth grade and the other with a listenability difficulty level of approximately lower eleventh grade. Three prints of the film were magnastriped in order to make it possible to record the new narrations which were developed to accompany the original visuals.

In an effort to attain sound quality which would compare favorably with the better commercially-produced films, the writer utilized the facilities of the Indiana University Audio-Visual Center's recording studio. A former radio announcer did the actual

recording, and music was "dubbed in" by channeling both narration and music through a Western Electric Mixing Console and then into the Bell and Howell Filmosound 202 recording projector for transfer onto the magnetic sound track.

THE TEST

The initial test developed for the experiment consisted of two parts. Part One contained 35 multiple-choice questions (with five alternatives) and 10 true-false questions designed to measure students' knowledge of science information and scientific vocabulary presented in *Life of a Plant*. These items represented an exhaustive gleaning of the information presented in the film. The second section of the test contained 40 multiple-choice vocabulary items constructed to measure students' understanding of difficult, nonscientific words used in the various narrations to facilitate explanations of the life cycle of the pea plant. As the narrations became increasingly difficult, the proportion of these difficult words also increased. Therefore, the selection of the words used in the vocabulary test was based upon a random sample of the difficult words included in the three narrations. The *Thorndike Junior Century Dictionary* (10) served as the primary source for word definitions and indices of difficulty.

A preliminary experiment was conducted with 90 seventh-grade students from University High School, Bloomington, Indiana, to obtain validity and reliability measures on the test. Difficulty and discrimination indices were found for each test item, and the test was then revised on the basis of these results. The final test consisted of a science information section of 30 items and a vocabulary section of 40 items. The reliability coefficient for inter-test reliability, as computed by the odd-even correlation technique using the final test scores of the 222 students participating in the actual experiment and corrected with the Spearman-Brown prophecy formula, was .89. A readability analysis of the test directions and the 30 science information items using the Dale-Chall Readability Formula indicated approximately seventh-grade difficulty.

TEST POPULATION

The test population consisted of 222 seventh-grade students from Bloomington High School, Bloomington, Indiana. Since this small midwestern city of some 20,000 inhabitants has an unusually wide range of occupational areas, including farming, a large electronics industry, considerable limestone quarrying, as well as

the usual opportunities available in any small city, it was felt this seventh-grade class might be rather typical of other seventh-grade students within the state.

None of the students had previously seen the film, *Life of a Plant,* or had studied the life cycle of green flowering plants.

EXPERIMENTAL PROCEDURE

In order to investigate the relative effect of narrations of different listenability difficulty levels on (a) the learning of science information and specific scientific vocabulary presented by means of an educational film, and (b) the development of difficult incidental vocabulary, the participating students were divided by means of a table of random numbers into three sections which served as the methods groups. As a pretest, all students were given the 70-item science information and vocabulary test developed by the author. Each student also completed the vocabulary section of the Cooperative English Test C1; Reading Comprehension, Form R. This stand-

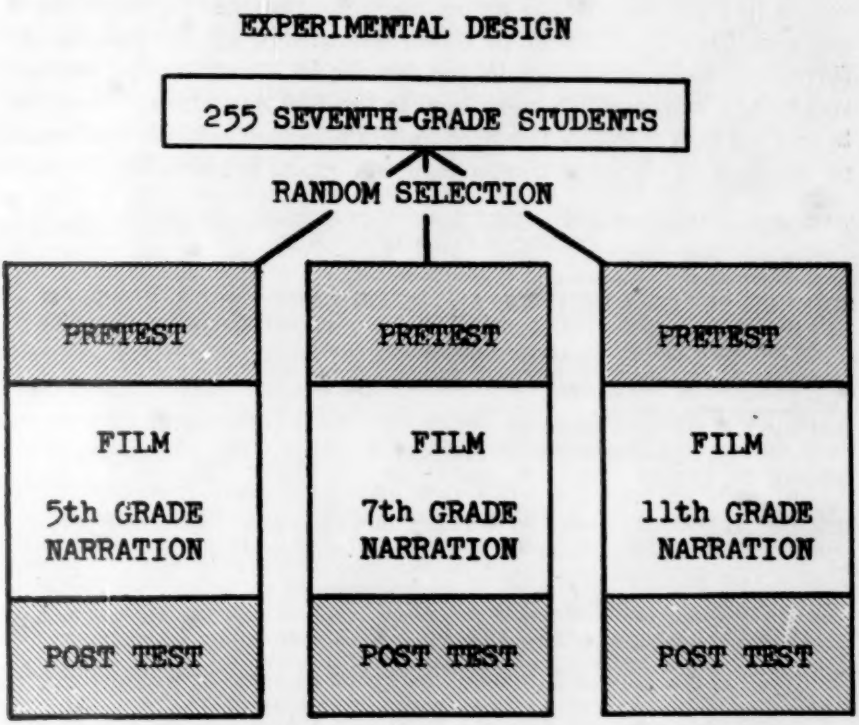

FIGURE 1

ardized test served as a further equating factor in the study of vocabulary development. The three groups of students then saw the film, *Life of a Plant,* twice with each group seeing the same visuals but hearing narrations of different listenability difficulty levels. Approximately 24 hours later, the science information and vocabulary test was readministered and the experiment concluded. The experimental design described above is shown in Figure 1. Analysis of variance, analysis of convariance, chi-square, standard error techniques, and t-tests were used to analyze the obtained data.

RESULTS

Table I shows the extent to which learning took place for each of the three experimental groups as indicated by the pretest and posttest scores on science information and difficult incidental vocabulary presented in the films.

Theoretically, it was assumed that the use of a table of random numbers to divide subjects into three experimental groups would provide reasonable assurance that the three groups were not significantly different in either knowledge of the science information to be presented in the film or in knowledge of certain vocabulary words which were used in the film narration. In order to find out how effective the randomized selection actually had been, an analysis of variance comparison was made between the pretest

TABLE I — MEAN TEST SCORES AND STANDARD DEVIATIONS FOR THREE METHODS GROUPS

		SCIENCE SECTION (30 items)		INCIDENTAL VOCABULARY SECTION (40 items)		COOPERATIVE ENGLISH TEST C1 *	
	N	*Pretest*	*Posttest*	*Pretest*	*Posttest*	*Pretest*	
GROUP I	75	M 10.05	M 15.71	M 22.13	M 23.16	M	34.73
		SD 2.20	SD 4.85	SD 7.71	SD 7.91	SD	10.57
GROUP II	72	M 10.28	M 14.61	M 20.57	M 22.19	M	34.40
		SD 2.82	SD 3.87	SD 7.55	SD 7.74	SD	10.18
GROUP III	75	M 10.76	M 14.24	M 21.01	M 22.09	M	34.28
		SD 3.03	SD 4.26	SD 7.50	SD 7.51	SD	8.19

* Only the vocabulary section of the Cooperative English Test C1: Reading Comprehension, Form R was used.

Group I saw the film *Life of a Plant* with a narration listenability difficulty level of middle fifth grade.

Group II saw the film *Life of a Plant* with a narration listenability difficulty level of upper seventh grade.

Group III saw the film *Life of a Plant* with a narration listenability difficulty level of lower eleventh grade.

scores for the three groups. Results of this analysis indicate that there were no significant differences in initial science knowledge or vocabulary comprehension between the three experimental groups at the start of the experiment.

Analysis of variance results of the posttest scores of the three experimental groups on the test of science information and scientific vocabulary shows no significant differences in the ability of the three experimental groups to learn science facts and scientific vocabulary presented in the film, *Life of a Plant*, even though the film narration varied in listenability difficulty levels from middle fifth grade to upper seventh grade to lower eleventh grade as estimated by the Dale-Chall readability formula. A chi-square analysis of the distribution of test results for the three groups revealed that the various film narrations did not appear to produce significantly superior results for either upper or lower level students in any of the three experimental groups.

In developing the different levels of film narration used with the film, *Life of a Plant*, certain difficult, nonscientific words were incorporated into the narration of lower eleventh-grade listenability difficulty which were not included in the narrations of upper-seventh- and middle fifth-grade listenability difficulty. The two more difficult narrations also had words which were not included as part of the simplest narration. The term "difficult" here refers to a word's relative position in terms of Thorndike's (10) categories of words normally learned by students in progressive stages of vocabulary development.

It was felt that certain context cues presented in the visuals might help the student learn the meanings of these difficult words. For instance, when the narrator says, "Here are four of the principal growth processes of the pea plant going on *simultaneously*," the student sees four types of animated actions going on *at the same time*.

In order to find out if the use of difficult words accompanied by visual context cues would result in a significantly greater vocabulary development, an analysis of covariance was run on the vocabulary posttest scores for the three experimental groups.

The technique of analysis of covariance was used since it enabled the experimenter to secure increased precision by controlling the factor of initial vocabulary development as indicated by scores on the vocabulary section of the Cooperative English Test C1: Reading Comprehension, Form R. The analysis of covariance re-

sults indicated no significant differences in development of difficult incidental vocabulary for the three experimental groups as measured by the writer's 40-item vocabulary test.

CONCLUSION

On the basis of the data obtained from the experimental use of three versions of a single film with 222 seventh-grade students, the writer presents the following conclusions:

1. There seemed to be no significant difference in the ability of seventh-grade students to learn science facts presented in the film, *Life of a Plant*, shown twice, when the film narration varied in listenability difficulty levels from middle fifth grade to upper seventh grade to lower eleventh grade as estimated by the Dale-Chall readability formula.

2. There seemed to be no significant difference in the ability of seventh-grade students to acquire difficult incidental vocabulary included in the three film narrations when these narrations varied in listenability difficulty levels from middle fifth grade to upper seventh grade to lower eleventh grade as estimated by the Dale-Chall readability formula.

3. There was a statistically significant gain (at the 1 percent level of confidence) between the students' pretest and posttest results on the knowledge of science information presented in the film, *Life of a Plant.*

4. There was a small statistically significant gain (at the 1 percent level of confidence) between the students' pretest and posttest results on the understanding of difficult incidental vocabulary used in the three narrations of the film, *Life of a Plant.*

5. There seemed to be no significant difference between group distributions of the posttest results on the science information section of the test when these group distributions were analyzed by parts. The various film narrations did not appear to produce significantly superior group results for either upper or lower level students in any of the three experimental groups.

DISCUSSION AND RECOMMENDATIONS

Results of this study differ from those found in a similar study reported by Allen (1) in 1950. He found that for the films *The Mosquito* and *The Water Cycle* commentary written one-grade level below the seventh-grade level of the participating students resulted in significantly greater learning than did commentary written one-grade level above.

It seems worthwhile to consider factors which might explain these differences in results.

First, since the film *Life of a Plant* contained a considerable number of difficult concepts, good utilization theory seemed to indicate that the film should be shown twice. This repeat showing may have had the effect of erasing any significant differences in learning resulting from varying narration listenability difficulties. Students participating in Allen's experiment were given only one opportunity to see *The Mosquito* and *The Water Cycle.* Further study is needed to investigate possible effects which repetition might have on the general problem of narration listenability difficulty.

Secondly, since film visuals should carry an important part of the teaching load, it seems logical that if the visual presentation is very effective, the narration will be relatively less important to the total learning situation. If this is true, a teacher may find that she can use a film with a narration above her students' normal level of listening comprehension provided the visual elements are clear and meaningful. It is conceivable that the animation and time-lapse photography in *Life of a Plant* may have been so effective that the film narration assumed a subordinate role in the over-all effectiveness of this film, and because of the visual context clues the three narrations may have been understood about equally well. Neither Allen or the writer conducted any type of experiment similar to the Nelson-Moll (9) experiments to determine the relative efficiency of the video and audio elements of the films used in their studies. Since the relationship between visual and verbal elements in films is so integral a part of any study of the effect of film narration listenability difficulty, it seems evident that we need further studies designed in such a way that we can gain further insight into the interrelationship of these and other variables affecting the problem.

Perhaps studies designed to utilize factoral analysis and other advanced statistical techniques may uncover new relationships which will help to fit the many isolated research findings into an evolving conceptual framework. These techniques have proven effective in other fields but have not been employed to any great extent in film research. In time we may even develop a "film difficulty" formula which would be as helpful in film selection as readability formulas have been in textbook selection.

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HISTORY OF A-V EDUCATION IN CITY SCHOOL SYSTEMS

•PAUL SAETTLER

This is the second in a series of papers designed to provide an historical account of audio-visual communication. The first article, "Historical Overview of Audio-Visual Communication," appeared in the Spring 1954 issue. Paul Saettler is assistant professor of education, Sacramento State College, California. The study from which this paper is drawn was completed for the PhD degree at the University of Southern California.

ONE OF the more significant movements in the history of audio-visual communication in education in the United States has been the development of audio-visual education in city school systems. This growth was manifested by the formal organization of "departments of visual instruction" and by an impressive range of audio-visual activities on a nondepartmentalized basis. This paper will trace the early organizational and administrative aspects inherent in such development.

ORGANIZATIONAL HISTORY

The organization of audio-visual education in city school systems proceeded along four distinctive paths: (a) the emergence of school museums, (b) the founding of slide libraries, (c) the establishment of film libraries, and (d) the nondepartmentalized systematization of audio-visual education. In many instances, examples of all these developments can be easily detected in the same city school system. But, however these growth patterns may overlap or supplement each other, it is indisputably clear that the school museum movement gave the first vital impetus to the organization of audio-visual education in city school systems.

Emergence of School Museums

The practice of forming collections, whether of art objects or the relics and specimens of natural history, dates from the secret

scientific societies formed in Italy during the 16th Century. In the past, the great social movements have always been inextricably intertwined with the popularization of knowledge; and subsequently, this spread of knowledge has always been a prodigious part of museum history. One of the earliest types of museums in the United States was the college museum of natural history. In fact, much of our popular education in natural history has been derived from such college museums as the Dartmouth College Collection, started in 1783; the Mineralogical Collection of the University Museum at Harvard, begun in 1784; the Peabody Museum of Natural History, founded by Yale in 1802; and The University of Ohio Museum, dating from 1823.

Quite early, a number of endowed libraries, museums, and art institutes established separate departments for extension work in the public schools. The Davenport Academy of Sciences and the Buffalo Society of Natural Sciences were among the first to organize specific cooperative school programs. These "museum-school" instructional plans were later admirably supplemented by similar enriched school programs sponsored by such institutions as the Field Museum of Natural History, the Brooklyn Institute of Arts and Sciences, and the American Museum of Natural History. Perhaps the most notable example of a cooperative educational undertaking of a museum is that offered by the Philadelphia Commercial Museum, which, about 1900, prepared and presented free of cost a total of 250 collections to the Pennsylvania schools.

The so-called school museum movement reached its peak during the decade 1904 to 1914. Aside from the many tax-supported and privately endowed museums founded during the period, three public-school museums were established which have a special significance for the audio-visual education movement. These were the St. Louis Educational Museum, the Reading Public Museum, and the Cleveland Educational Museum.

The St. Louis Educational Museum, founded in 1904, became the first administrative unit for audio-visual education organized in a public-school system. Much of the influence for this development can be attributed to former United States Commissioner of Education, William Torrey Harris. In 1876, when Harris was still superintendent of the St. Louis Public Schools, he stated in his annual report that, "every lesson should be given in such a way as to draw out the perceptive powers of the pupil by leading him to reflect on what he sees or to analyze the object before him."

EARLY AUDIO-VISUAL DEPARTMENTS

City	*Date Established*	*Director*	*Title of Director*
St. Louis	1904	A. Meissner	Curator, Educational Museum
Reading, Pa.	1907	L. W. Mengel	Director, Reading Public Museum and Art Gallery
Cleveland	1909	W. M. Gregory	Director, Educational Museum
Philadelphia	1915	A. F. Liveright	Librarian, Pedagogical Library
Chicago	1917	Dudley C. Hays	Director, Bureau of Visual Instruction
Newark	1918	A. S. Balcom	Ass't Supt. of Schools in Charge of Visual Instruction
Detroit	1919	B. A. Barnes[a]	Supervisor of Visual Instruction
Detroit	1919	Julia Gilmore[b]	Curator, Children's Museum
Kansas City	1919	Rupert Peters	Director, Division of Visual Instruction
Los Angeles	1920	A. Loretto Clark[c]	Acting Director, Visual Education Department
New York	1920	E. L. Crandall	Director of Public Lectures and Visual Instruction
Atlanta	1922	E. R. Enlow	Supervisor of Visual Education
Pittsburgh	1922	John A. Hollinger	Director of Department of Visual Education and Nature Study
Berkeley	1922	Anna V. Dorris	Director of Visual Instruction
Sacramento	1922	(unknown)	Director of Visual Instruction
Buffalo	1923	Orrin L. Pease	Supervisor of Visual Instruction
Buffalo	1920	Carlos Cummings[d]	Director of Visual Instruction
Oakland	1923	H. O. Welty[e]	Director, Department of Visual Instruction

a. Appointed for 1923-24.
b. Children's Museum under general direction of the Supervisor of Visual Instruction.
c. Organized as a separate department in 1923.
d. Buffalo Society of Natural Sciences, Department of Visual Instruction, subsidized in part by city for service to public schools.
e. Chairman of committee which organized department in September 1923.
Source: F. Dean McClusky, *Visual Education 1923 Administrative Survey*. p. 11.

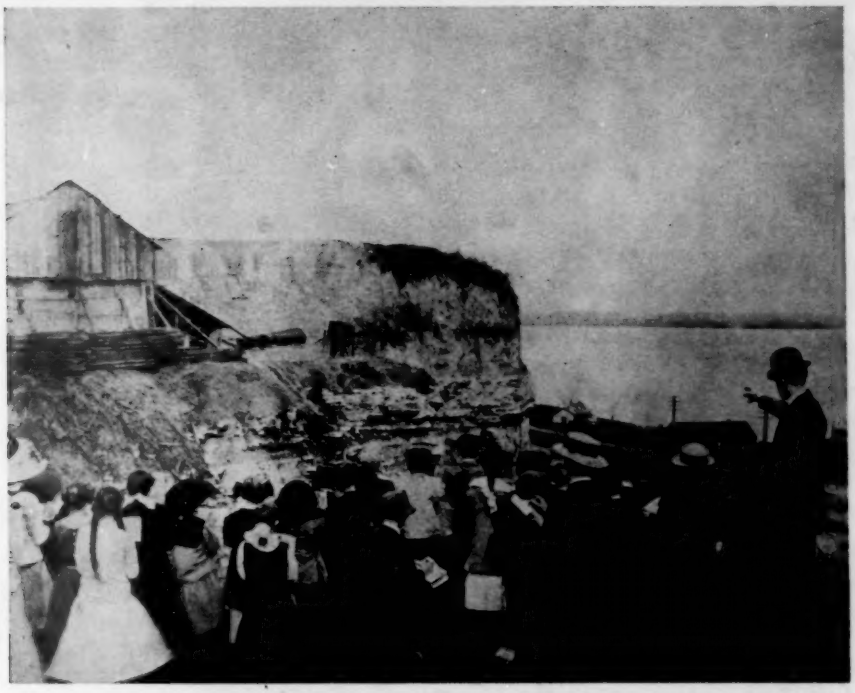
Ironically, the first opportunity to implement this so-called "original instruction" philosophy of education came in 1904 when the city of St. Louis played host to the Louisiana Purchase Exposition. As the direct consequence of organizing and managing a Public Schools Exhibit, Carl G. Rathmann, then assistant superintendent of the St. Louis schools, became aware of the educational potential in the schools of the many informative exhibits on display at the exposition.

An Early Photo Showing Principals and Teachers Studying the Exhibits of the St. Louis Educational Museum in 1914.

On September 13, 1904, the St. Louis Board of Education made its first authorization to Rathmann for the purchase of appropriate illustrative materials. Following this action, the museum dream became an actuality. The first art objects and models were soon supplemented by extensive gift collections from national museums and countries around the world. Amelia Meissner, the daughter of a famous horticulturist and long ripe for the idea of "bringing the world to the child,"[1] organized these materials and became the

[1] This phrase, which became the official slogan of the St. Louis Educational Museum, was coined by Amelia Meissner.

museum's first curator. A short time later, a horse and wagon were acquired, and in the fall of 1905 the educational museum began actively to serve the St. Louis Public Schools.

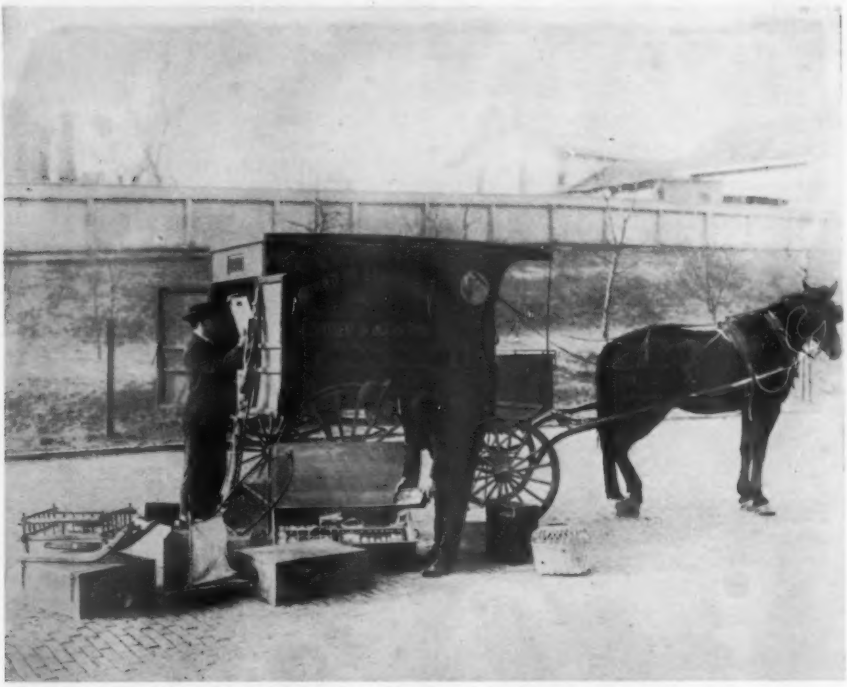


An Early Field Trip Conducted in Connection with the Activities of the St. Louis Educational Museum. Photo Probably Taken in 1911.

McClusky has observed that three points concerning the St. Louis Educational Museum deserve emphasis. He stated that the collections were built to supplement rather than supplant the course of study, that provision was made for the transportation of materials from the museum to the schools and return, and that a catalog of materials arranged in terms of the course of study was printed and made accessible to the teacher.

In the fall of 1907, the Reading Public Museum became the second administrative unit for audio-visual education to be organized by a public school. Credit for the founding of this museum belongs largely to Levi W. Mengel. Although the idea of such a museum originally took root in Mengel's mind during his preparation for his science and history classes, he first saw the practicality

of beginning a school museum when he attended the Louisiana Purchase Exposition.



First Horse Drawn Delivery Wagon of the St. Louis Educational Museum. First Put into Operation in 1904.

Ultimately, with considerable aid received from the Philadelphia Commercial Museum, Mengel succeeded in obtaining nearly 2000 items from the Commissions of China, Japan, India, Ceylon, the Philippines, and the Central and South American republics. The bulk of this material was immediately stored in Reading until it could be organized and arranged for use. In 1907, the Reading Board of Education finally passed a resolution to clear out the debris of the old high-school building and reserved the third floor for a school museum.

The third public-school museum was established by the Cleveland Public Schools under the direction of W. M. Gregory in 1909. The express purpose of the founding of this museum was to improve instruction in the public schools. Following the St. Louis pattern, collections of materials and printed pamphlets were sent to the teacher as ordered. Similarly, the museum supplied materials

for school lecturers and prepared a number of nonportable exhibits.

Founding of Slide Libraries.

A second developmental stream in the organization of audio-visual education departments was the establishment of slide libraries in the cities of Philadelphia, Detroit, and Chicago. Undoubtedly, the most intriguing historical narrative of an individual slide library is the Chicago story.

In 1895, a group of 10 enthusiastic principals in the Chicago schools organized a projection club entirely independent of the Chicago Board of Education. This group of principals, with their own funds, contributed $25 each to a "slide fund" which was used to purchase slides and projection equipment. As a consequence, this small group of educators not only distributed slide sets among their respective schools and the community, but they also purchased additional slide sets and kept their collection in good repair.

The Chicago Projection Club eventually gained such wide appeal that it began to assume proportions which made it impossible for this group of volunteers to operate it effectively. Therefore, in 1917, the complete collection of some 8000 slides was given to the Chicago Board of Education with the proviso that "it be built up, its use fostered, and its advantages extended" to all the schools in the system. The Board accepted this responsibility and began to administer it as part of an organized audio-visual department.

Establishment of Film Libraries.

The third development in the organization of audio-visual education departments in city school systems was the founding of film libraries. This development erupted abruptly and progressed rapidly following the organization of the Chicago Bureau of Visual Instruction in 1917. Newark set up its audio-visual department in 1918; Detroit and Kansas City followed in 1919; and Los Angeles, Buffalo, and New York City formed their departments in 1920. The year 1922 marked the beginning of four more audio-visual departments in Atlanta, Pittsburgh, Berkeley, and Sacramento.

All these audio-visual departments or "bureaus of visual instruction" developed primarily from the impetus induced by the introduction of motion pictures in the classroom. This, in turn, was stimulated by the production of educational films by the United States Government and the activity of the United States Bureau of Education in connection with war films. The outstanding illustrations of this development were those of New York City and

Sacramento. In both of these city audio-visual education departments, all activity revolved exclusively about the collection and distribution of motion pictures.

Nondepartmentalized Audio-Visual Education.

The systematization of audio-visual education also took place in city school systems which did not formally organize departments. In a 1923 survey made for the National Education Association, McClusky found three types of organization that had evolved in city schools. The first type of organization approximated an audio-visual department. It consisted of an audio-visual education committee, composed of teachers and administrators, which concerned itself with the problems and administration of audio-visual education in the school system. Typical examples of this type of organization were the city systems of Dayton, Indianapolis, Providence, and San Francisco. As an illustration, the Dayton Board of Education authorized the superintendent to appoint a committee of three elementary-school principals and two supervisors to administer the audio-visual program in the schools.

A second type of organization was identical with the first in that a committee was placed in control of audio-visual education. But the constituent members of this committee were representatives of a group of teachers and principals interested in audio-visual education rather than official representatives of the superintendent or board of education. Examples of this type of organization were the city school systems of Portland, Seattle, and Tacoma.

The third type of organization was confined to the individual school. The responsibility for audio-visual education service rested entirely with the principal or teacher of each respective school within the district, independent of the city audio-visual departments.

ADMINISTRATIVE ASPECTS

The most reliable and extensive source of data on the early administrative history of audio-visual education in city school systems is the unpublished administrative survey made by F. Dean McClusky in 1923. In this survey, he reported on such subjects as salaries of audio-visual personnel, value of equipment and materials, audio-visual department budgets, types and amount of materials and equipment, distribution methods employed, and film evaluation and utilization procedures in 14 city school systems.

The slide was the principal audio-visual material circulated.

This was closely followed by the film, stereograph, picture exhibit, graphic booklet, chart, costume doll, and model.

One of the most important problems of city audio-visual education departments was the distribution of audio-visual materials. In the early city audio-visual departments, two general methods of distribution were used. These methods, known as the "circuit" and "special-order" methods, were quite different in purpose and operation. Both, however, were used in varying degrees by the same audio-visual departments.

By the "circuit" method a film was passed from school to school until it reached each school on an established circuit. Each school on the circuit could depend on the reception of specific films at regular intervals throughout the school year. In 1923, the cities of Atlanta, Detroit, Kansas City, Newark, New York, and Sacramento were using the circuit method of distribution.

The "special-order" method of distribution was relatively simple in contrast to the circuit method. In order to secure a film, a teacher or principal contacted the school system audio-visual department and made his request known for a specific day and hour. All city departments in 1923 used this method with the exception of New York and Sacramento.

Film selection and evaluation in the early 20's was practically undeveloped. In cities using the special-order method, film selection was primarily the responsibility of the director of the audio-visual department. However, in Berkeley and Los Angeles, film committees assisted the director.

In 1923, the Berkeley audio-visual department distinguished itself by being the first to publish a graded list of films. A short time later, Chicago prepared the first graded catalog of slides. Other materials furnished by these early audio-visual departments were printed catalogs of materials available. In most of these catalogs, however, no attempt was made to supply graded lists of materials.

SUMMARY

One of the significant movements in the history of audio-visual communication was the development of audio-visual departments in city school systems. This line of development took four forms. Educational school museums were founded, slide libraries were organized, film libraries were established, and nondepartmentalized audio-visual education developed.

In most instances, audio-visual budgets, materials, and personnel were limited. Most materials consisted of slides and stereographs rather than films. The two most commonly used distribution methods were the "circuit" and "special-order" methods. Film evaluation and utilization were still hardly touched; however, the Berkeley Visual Education Department published a graded list of films and slides as early as 1923. Generally, the growth of visual education considerably increased the complexity of educational administration and created some confusion as to the precise status of audio-visual directors or coordinators.

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RESEARCH ON "FORTUITOUS" COMMUNICATION: A REVIEW

•MALCOLM S. MacLEAN, JR.
•BRUCE H. WESTLEY

This paper presents one application of the authors' conceptual model of the communication process published in the last issue of AVCR. Here they are attempting to order the existing research findings on "fortuitous" communication in relationship to their model. Malcolm S. MacLean, Jr., and Bruce H. Westley are assistant professors of Journalism, The University of Wisconsin.

IN THE last issue of the REVIEW the authors (71) presented a conceptual model of the total communication process. We expressed the hope that such a model would prove useful in ordering existing findings in mass communications research, point to areas of strength and weakness in our knowledge, and stimulate further efforts. In this report we will attempt part of such an ordering.

The principal elements in the model are these:

As. (Advocacy roles). This is what is usually meant by "the communicator"—a personality or social system engaged in selecting and transmitting messages *purposively.*

Bs. (Behavioral system roles). This is what is usually meant by "the receiver," "the public," and such—a personality or social system requiring and using communications about the condition of its environment for the satisfaction of its needs and solution of its problems.

Cs. (Channel roles). Often confounded with *As*, *Cs* serve as the agents of *Bs* in selecting and transmitting fortuitously the information *Bs* require, especially when the information is beyond the immediate reach of *B.*

X. The totality of objects and events "out there." *X'* is

these objects and events as abstracted into transmissible form: "*messages*" about *X*s and *A*-*X* relationships (such as "opinions").

Channels. The means by which *X*'s are moved by way of *A*s and/or *C*s to *B*s. Channels include "gates" manned by *C*s who in various ways alter messages.

Encoding. The process by which *A*s and *C*s transform *X*s into *X*'s. *Decoding* is the process by which *B*s interiorize messages.

Feedback. The means by which *A*s and *C*s obtain information about the effects of messages on *B*s.

Since other models and research approaches have emphasized the *A*-type communicator, and since we would like to point up the *C* role (perhaps because we are journalism teachers), we will limit ourselves here to relatively systematic studies which involve, explicity or implicity, fortuitous communications. This means that we will ignore here studies of the persuasive communicator.[1] Further, we will include none of the many histories or biographies of *C*-type institutions or persons.

Instead, we plan here to review and place in the model some of those studies dealing with the *C* role, the *B* role and messages, and those relating *C* to messages, *B* to messages and decoding, *B* to channels, and *B* to *C*.

OCCUPANTS OF THE *C* ROLE

What kinds of people do we find in the business of passing along news about events which occur beyond the limits of our immediate surroundings? Rosten's survey (52) of the Washington correspondents in the mid-30's is the most comprehensive study in this area. He investigated the social and professional composition of 127 of the newspaper and wire service correspondents in the capital. He found that they tended to originate in a professional, higher income class in small Midwest towns, to be college graduates in liberal arts programs who entered journalism by choice and like their present assignments, to have a settled marital status, to be nonchurch goers who especially read news and liberal magazines, and to have had 7 to 10 years of news experience before reaching Washington. In an extensive study of the effect of editorial-page policy on correspondent performance, the correspondent is re-

[1] Including a particularly interesting study of one *A* role (the public relations specialist) by Sussman (63). This limitation also rules out the extensive work of Hovland and his associates (25) (26) on "persuasive communications" and much of the work on communication effects summarized by Klapper (33).

vealed to subscribe to shared norms of objectivity and fair play but to be subject to many subtle pressures from ownership.

Two other studies are more or less patterned after Rosten's: Prugger's analysis (50) of the editorial personnel of the Milwaukee *Journal* in 1940-41 and Swanson's study (59) of a Midwest small-city daily. Kruglak (37) describes some characteristics of the US correspondents in London. Charnley (15) analyzed the control structure of the newsrooms of 38 Midwest radio stations of all sizes. He reported the educational and professional qualifications, salary, and duties of the radio news workers.

Media executives have only lately become interested in personnel psychology and the more systematic selection of *C*-role occupants. Stone (58) tested the staff members of the morning and evening dailies in a large Midwest city. His report compared means for various types of news and editorial personnel on such standardized measures as the Strong Vocational Interest Inventory, the Michigan Vocabulary Profile, and the Ohio State University Psychological Test. Editorial writers (the newspapers' own *A*-role occupants) proved superior to other personnel in verbal skills and general background.

Jones and Swanson (29) followed Stone's pattern in their study of 55 news-editorial workers of nine Midwest small-city dailies and compared their results with Stone's. The group was higher on verbal-linguistic skill than a group of college journalism majors but lower than Stone's metropolitan newspaper group.

An assumption implicit in our model is that B's need for news supports and creates the *C* role. This is interestingly reflected in a study of Chicago community newspapers by Janowitz (28), who relates the rise of these papers to the development of community consciousness.

The model suggests that research in the area of the role of *C* might well explore the origin, strength, and content of professional or craftsmanlike norms associated with this role and their strength when tested against the power associated with superordinate status within the same structure. We suspect that this is one of two keys to an understanding of newspaper objectivity, the other being the possible influence of the *C*-role occupant's own unconscious biases.

The model also suggests the importance in this role of sensitivity to the needs of the constituent *B*s, a sensitivity that proves hard to teach to future reporters. (Incidentally, we have found

the model helpful as a teaching device in clarifying these and other important relationships.)

HOW *C* OCCUPANTS ENCODE AND HANDLE MESSAGES

Only recently have researchers turned their attention to the *C* functions of selecting environmental elements (*X*s) or messages (*X'*s), encoding them and moving them through channels. The kind and amount of message is controlled in some measure by various *C* occupants at crucial points along each channel—reporters, press service editors, news editors, and the like. What happens to the message at these points? How does this relate to the skills, attitudes, and conformity to norms of the gatekeepers? How do *C* occupants differ in their treatment of a given event?

White (72) studied the news decisions of the telegraph editor on a Midwest daily. From the stream of news items coming in from the three major wire services what did he select and what did he reject? Why did he reject what he did? White had his gatekeeper record his reason for eliminating each item. This case study revealed a number of the factors determining the gatekeeper's choices, including his own antipathies.

Studies by Cutlip (16), Van Horn (70), and Casey (13) were concerned chiefly with what happened to messages after they were started along the wire service channel. In 1951, Van Horn compared files of the AP trunk wire and the Wisconsin state wire for amounts of various kinds of content from various points of origin. Casey studied how much of which kinds of content in the state AP file was used by 18 Minnesota dailies during two days in 1950. He found that relatively small *proportions* of national government and politics, science and education, and human interest were used. High-use subjects were sports and religion. Cutlip investigated two gate effects at once: that between the AP trunk wire and the Wisconsin teletypesetter (TTS) wire and that between the latter and four Wisconsin dailies. He covered four selected days between December 1952, and March 1953. The state gatekeeper made his sharpest cut in foreign news, a category the papers used heavily. By subject, economic news was most heavily cut by the state man, while he cleared much larger proportions of sports and human interest material. Though these studies show what happened to the message at various channel points, they do not relate this to the nature of the *C* occupants as White did.

Names in the news (*C*s' selection of *A*s and *X*s) were studied

in two West Coast dailies. Bush and Bullock (10) analyzed 10 issues of each paper within five months in 1950-51. They classified each name by occupational group, then judged whether the portrayal of the person was "strong," "weak," or "neutral." Events in which the persons were involved were categorized as to social approval or disapproval. Results indicated a clear relationship between social class and news portrayal.

One of many aims of a study by Swanson, Jenkins, and Jones (62) was to measure the performance of *C* occupants in reporting a presidential visit to the Twin Cities in 1949. They analyzed the themes in the speech and compared radio and newspaper news coverage. Radio news treatment proved less faithful to the speaker's distribution of themes and much less closely related to audience recall of themes than did newspaper treatment.

Many studies in this area arise from social criticism of the control of media content and its possible effects on public perceptions of controversial issues. Do we have a "one-party press?" How sensational (bad) or constructive (good) is the content (array of messages presented)? Some of these studies are as much measures of the value systems of the researchers as they are of the channel content. We are most interested in those which have investigated the extent to which *A*-role norms become confused with *C*-role norms and how this is related to the nature and situation of the *C*-role occupants.

Kingsbury and Hart (32) made an elaborate study of the content of 44 selected US daily newspapers in 10 week-day issues during the summer of 1929. They constructed a "socialization-sensationalism" index based on the play given various headline themes and arrayed the newspapers in terms of the index for comparison.

Klapper and Glock (34) compared nine New York City dailies in their news coverage of the Edward U. Condon "case." Analysis of nearly 4000 statements showed that institutional *C*-role occupants differed considerably in the selection and encoding of *X*s and that the differences were systematically related to these institutions as *A*s. In other words, favorable (to Condon) news treatment could be predicted reliably from a favorable editorial position.

Allport and Faden (2) studied how eight Boston newspapers handled the Neutrality Act for 10 weeks in 1939. They found that the issue became "skeletonized" and that the papers tended to select news items congruent with their editorial positions.

Wire service coverage of a 1949 murder trial, which included testimony of a lewd and brutal nature, was studied by Barnes and Lyness (4). They had a sample adult audience rate news passages on "moral offensiveness" (*B* response to *X'*) and found fewer offensive themes on the radio than on the news wire.

At least two studies have compared *C* performance at the international level. Kayser (31) compared the leading papers in 17 countries for one week in March 1951, on amount of attention to and treatment of 18 top news events of the period. The International Press Institute (27) analyzed the sources, content and use of foreign news flowing over 45 wire services to 177 newspapers (105 of them in the US). It also assembled foreign correspondents' opinions of the portrayal of their own countries by newspapers in the countries where they were stationed.

Davis (17) compared the incidence of crime (from official sources), news of crime in four Rocky Mountain dailies (content analysis over 31 months) and the public's estimate of the incidence of crime (area-sample poll in Colorado). He found that news incidence did not reflect crime incidence. Opinion estimates reflected neither. Here we have, roughly speaking, the relationship between special *X*s, the messages as presented by *C* occupants and *B* occupants' images.

How do *C* occupants handle political campaign news? Nearly all researchers in this area have concentrated on newspapers (perhaps since they are the center of the greatest controversy and the easiest to study). Some have studied the relationship of "bias" in news coverage to editorial stand. But bias, clearly, is not an easy thing to measure.

Kobre (36) studied news and editorial treatment of the 1952 presidential candidates in all Florida dailies the month before the election. Most papers fell within the 50-60 percent range on news space, number of stories, and number of front-page stories given each candidate. He also measured headline "weight," page-one position and picture space. Although the Florida papers favored Eisenhower editorially, 21-8, the play generally went to Stevenson: in news space, number of stories, number of pictures, and position. Eisenhower got a slight advantage in headline weight.

How 14 selected Wisconsin dailies handled the same campaign was studied by Higbie (23). He found that which side got the more space depended on whether Truman stories were included.

But in any case better *play*—roundup leads, headlines, page position, and pictures—went to the Republicans.

Ferguson and Smuckler (19) investigated newspaper coverage of the 1952 senatorial campaigns in Wisconsin and Connecticut. The selected newspapers gave the greater space to the incumbents, Senators McCarthy and Benton. News coverage and play were consistently related to editorial position of the papers in both states.

Analyzing four papers pro-Stevenson editorially and four pro-Eisenhower (the sets matched in circulation and community), Klein and Maccoby (35) found that editorial position reliably predicted favored treatment in headline space, "tone" of headlines, story placement, number of "biased remarks," number of direct quotes, front-page story space, and total story space. No significant relationship was revealed for seven other measures of news handling.

Price (49) suggested the use of standard scores for comparing performance on campaign news. He showed direction and amount of deviation from the means for eight dailies on four measures of news coverage of the 1952 presidential campaign, thus avoiding the implication that the sides of a controversy should be given exactly equal treatment without regard to "newsworthiness."

Has the handling of political campaign news changed in the last 50 years or so? Batlin (5) compared three San Francisco dailies in the 1952 campaign with those of 1896. In both years the papers gave favored news treatment to editorially supported candidates, but the 1952 coverage was the better "balanced" of the two. He coded statements on "favorableness" and expressed his results in terms of an "index of imbalance." His methodology was similar to that of Bush (9) and Rarick (51) in their study of the coverage of the 1950 Douglas-Nixon campaign for US Senator by a sample of 12 daily newspapers in California.

In another study of the 1952 campaign, Blumberg (8) indicated that six out of 35 "influential" papers were "clearly partial" in news treatment to the editorially favored candidates.

Studying tendencies of radio to play an *A* role in news presentation, Sussman (64) analyzed 212 items of news and comment about labor during 665 broadcasts from a sample of 33 network programs during seven weeks of 1944. She found that "morality" themes predominated, and that they were unfavorable to labor 5-1. Unfortunately (for our purposes) she did not distinguish between news (where *C* norms should operate) and comment (where *A* norms predominate).

At least two researchers have investigated the accuracy of messages. Charnley (14) checked a large number of messages with the news sources (persons mentioned). Two-thirds of the reporter-handled stories contained mechanical or factual errors, according to these sources.

Some critics have contended that popular article writers distort science material in their attempts to write readable copy. Tarleton (68) studied articles on organic and inorganic chemistry and biochemistry in two daily newspapers, one Sunday paper and five general circulation magazines over three months in 1950. He found no relationship between scientific accuracy and readability (measured by the revised formula of Rudolf Flesch). Nor did he find any significant correlation between accuracy and article length.

We have seen that many researchers have compared the handling of messages by various *C* occupants. Only one has studied closely the characteristics of the occupant as related to his handling of messages. Some have done little more than measure performance against some rather vaguely defined "ideal."

MESSAGE

Pure message studies (unrelated to either *A* or *C* type encoders or to *B* decoders) would probably bear little fruit. A number of studies (chiefly descriptive) have simply shown the space distribution of content in terms of its source, subject, and type of presentation. Even here, of course, relationship to the particular *C* occupant was implied. Another kind of research has investigated the form of the message, usually in terms of how this makes the job of decoding easy or difficult.

As part of a broad community study, Nafziger (44) analyzed space and item distribution of content in a small-city daily for the years 1939, 1944, and 1948. He also made similar studies of a community weekly, a metropolitan daily, and a Negro weekly. Results showed the impact of events on content emphases and the varying concerns of different types of *C* occupants. Earlier works in the development of this approach were those of Speed (57), Willey (73) and Woodward (74).

Baker (3) analyzed 85 radio station logs for one week in 1947. Using 17 program categories, he found that music, dramatic, and news programs got the most radio time, in that order. He also

showed the relationship of program allotment to size and type of station, type of sponsorship, etc.

The widely known work on readability by Flesch and others has been summarized elsewhere (20). This research, of course, deals with the style of the message, from which degree of comprehension by *B* occupants might reasonably be predicted.

Taylor (69) developed a method for analyzing message style which is more difficult to manage but might offer much higher research rewards than the above readability measures. It ties message comprehensibility directly to the "target" *B* occupants. The procedure involves omitting words randomly from the passage to be tested and having respondents fill in the missing words. In effect, it tests the "degree of congruence" between the "language" of encoder and decoder. In our terms, this would mean the degree of sharedness of their symbol systems with respect to a given content. It considers the linguistic unit *in context*.

MESSAGES TO *B* OCCUPANTS

We have seen the *B* role as that involving the decoding of messages for need satisfaction and problem solution with the further function of fortuitous or purposive feedback to *C* and *A* occupants. Much communications research is concerned with the response of *B* occupants to messages and is in itself a systematic form of feedback. Advertisers and other purposive communicators, publishers, editors, and writers all want to know to what extent and how their publications or messages were received and by whom. And how the messages modified the attitudes and behavior of *B* occupants.

Controlled experiments on effects of *C*-produced messages on *B* occupants are rare. Tannenbaum (65) varied headlines on a "planted" story about a murder trial, one headline implying guilt, one implying innocence, and one neutral. After reading the entire page under simulated normal conditions, respondents were asked for attitudes about guilt or innocence. Headline differences produced attitudinal shifts in the expected directions. Headlines tended to affect least those respondents who read most of the story.

Tannenbaum and Kerrick (67) conducted a similar study, using the same story, on 10-minute taped radio newscasts. Here they varied the lead sentences. Again, attitude change was significant in the expected direction. Leads on a story about campus affairs did not differ significantly in effect.

In another study, Tannenbaum (66) edited a 12-item newscast to randomize item order in 12 versions to which 12 groups totaling 180 subjects were exposed. He found recall reliably better for the second half of the program, for the beginning and end of the program and significantly better for the end than the beginning.

Schramm's analysis (54) of news content in terms of immediate and delayed reward we discussed in our article on the conceptual model. He found the reading of delayed reward news negatively correlated with reading of immediate reward news, .39, among 626 respondents. People of more schooling read significantly more delayed reward news than those of lower educational level.

In the same piece, Schramm reported a test of "psychological proximity" or "self-identification" with the news as a dimension of reader response to news content. From this pilot work, it appeared that this quality might predict the proportion of readers and depth of reading of a news item with considerable reliability.

Nafziger, MacLean, and Engstrom (46) factor analyzed the reading of material in a metropolitan and a small-city daily. While they found some important differences between papers, three factors accounted for much of the common variation in reading in both papers: (a) pictures, comics, and sports, (b) war-related news, politics-government, and economic news and (c) religion, leisure-time, and people-social.

Schramm (53) studied depth of reading on a large daily, a small daily, and a weekly in 1947. Results showed that reading of a story fell off rapidly at first and then flattened out, that longer stories lost readers faster than short ones, that depth of reading increased as size of community of the paper decreased, that feature stories held readers longer than straight news stories and that more readable stories (original Flesch formula) kept readers longer than less readable stories.

What kind of people tend to read which kinds of material in their newspapers has been the subject of considerable study, from the early readership surveys of Gallup to the more recent and more thorough analyses by Schramm and White (56); Nafziger, MacLean, and Engstrom (47); and those in the summaries of the *Continuing Study of Newspaper Reading* (1). Schramm and Ludwig (55) have also wrapped up some of the results from weekly newspaper readership surveys.

MacLean and Hazard (42) factor analyzed the ratings of 152 women on interest in 51 pictures selected from *Time* and *U.S. News and World Report*. They found six major factors underlying most of the variation in interest for 31 pictures. These common picture appeals they called idolatry, social problems, picturesque, war, blood and violence, and spectator sports.

Kay (30) used news pictures in a projective test to measure the anxiety levels of 35 subjects. He defined repression as the disparity between anxiety scores on the projective test ("real" anxiety level) and scores on an anxiety checklist (surface anxiety level). These measures proved to be importantly related to "acceptance" of various kinds of news messages. Acceptance was determined by finding how much the subject wanted to read more about an incomplete story. Stories were chosen on their ability to form different "cathexes" with different subjects. Kay's development of theory is an important contribution to the study of *B*-role motivation.

Does readability (style of message) affect depth of reading (response of *B* occupant to message)? Swanson's investigation (60) of an experimental college newspaper delivered to student trailer homes indicated that it does. By "split run" technique, one version of a story was made "easy" (Flesch formula), another version of the same story "difficult." A readership survey with 185 male students 30 hours after delivery found average reading of the easy version was 24 paragraphs and that of the difficult version 13 paragraphs.

Dunn (18) compared time listened to various types of radio programs by different groups of people during a week in 1949 to time given these kinds of programs by available stations in the Urbana, Illinois' area. As part of the same study, Hileman (24) examined the listening diaries of 337 children, aged six to 17. Of all the demographic variables studied, he found age the most significant determinant of program preference.

The International Press Institute's "Flow of News" study mentioned above (27) was chiefly concerned with how messages were selected and passed on by *C* occupants in various countries. But the report also included several readership studies showing how much attention people paid to foreign news.

The Allport and Faden study mentioned earlier (2) indicated that the *B* occupants knew and accepted the policy of the newspaper they read. *B*-to-*C* feedback (letters to the editor) about the Neutrality Act appeared to be predictable from newspaper policy.

Harris and Lewis (22) found that public use of air transport rose and fell with favorability and "visibility" (r=.57) of the newspaper attention to air transport.

In their study of voting behavior in the 1948 election, Berelson, Lazarsfeld, and McPhee (7) analyzed media exposure, attention to political materials in the mass media, etc. A typical finding: "The more exposure to the campaign in the mass media, the less voters change their positions and the more they carry through on election day."

Assessment of these *B*-message studies in the light of the model suggests that much might be gained by greater research emphasis on the relationship of the needs of *B* occupants to the content of the messages.

B OCCUPANTS' USE OF AND RESPONSE TO CHANNELS

How many people attend to the various mass media? Why do they prefer one over another? How do they feel toward particular *C* institutions? To what extent is channel use related to how aware they are of what goes on beyond their immediate environments? These and similar questions underlie existing research on the *B*-channel relationship.

Campbell and Metzner (12) studied media use by American adults as part of the Public Library Inquiry. They found that 82 percent read one or more newspapers daily, 79 percent listened to radio one or more hours a day, 69 percent read one or more magazines regularly, 63 percent attended one or more movies a month, 50 percent read one or more books a year and 21 percent heard one or more speeches a year.

MacLean (41) compared several communities on media use in a 1948 study. He found, for example, that use of radio and magazines was relatively constant from large city to small city to village to farm area but that use of movies and books decreased substantially.

Analyzing data from the same surveys, Nafziger, Engstrom, and MacLean (45) found that reading of newspapers, magazines, and books was clearly related to how well informed people were about foreign, national, state, and community affairs.

Lazarsfeld (38) found, in a 1939 study of adults in northern United States, that preference for radio over newspapers went up as socio-economic status went down. This preference was stronger for women than men and for rural people than urban people. In

terms of reading-listening *performance,* not preference, he found that socio-economic status had small influence on radio listening but a large influence on newspaper reading. He concluded: ". . . if people have the choice between radio and print for fairly comparable subject matter, the higher their cultural level the more likely they will be to prefer to read rather than listen."

Lyness (40) assessed the mass media behavior of children in odd-numbered grades, 3 through 11. These children paid little attention to the "educational" content of the media. Book reading declined with age. Radio was considered a more reliable source of news than newspapers. (Lazarsfield found that adults, too, considered it more reliable.)

Nixon (48) summarized surveys of public attitudes toward the news performance of four noncompetitive daily newspapers in 1949 and 1953. With few exceptions, favorable feeling increased. News performance ("fairness," for example) of the noncompetitive papers was viewed more favorably than that of the highly competitive Boston papers.

Berelson (6) took advantage of an unusual opportunity when a strike closed down the big New York dailies in June 1945. Sixty intensive interviews revealed a core of readers who missed the newspaper's fuller (than radio's) treatment of news. But many readers even more clearly missed associated rituals: reading as a means of "escape," as a means to greater social prestige, and as a means for vicarious social contact. He even found some who were rereading old newspapers.

Does party preference make a difference in media preference? Lazarsfeld, Berelson, and Gaudet (39), in their study of Erie County, Ohio, during the presidential campaign of 1940, found that it did. Republicans favored newspapers and Democrats radio on every educational level. Republicans thought newspapers more reliable and Democrats thought radio more reliable as sources of news about the campaign.

Campbell, Gurin, and Miller (11) related Eisenhower-Stevenson vote to media preference in the 1952 campaign. Those who rated radio as their most important source of information about the campaign were the least likely to vote. People who chose magazines were most apt to be pro-Eisenhower. Stevenson got his best break among those who favored television, but the authors felt that these differences might not mean much. Unskilled workers and farmers tended to rate radio as their most important source of in-

formation; professional people favored newspapers. People in other occupations were most likely to give television the "most important" rating.

Swanson (61) found high agreement in values between readers and news staff of a medium-sized Midwest daily, in 1947. These values included tolerance for diversity of opinion and the feeling that the newspaper should have no more control than "public opinion" and the editor's good taste. Readers felt that the newspaper should be allowed to criticize a book or the labor policy of an employer or gasoline quality but not their own religion. Neither should the paper print a painting of a nude, said a large majority.

In all of these studies, personality systems occupy the *B* role. In at least two studies, the authors treat social systems as *B*-role occupants. Merton (43) studied the influence structure of a small Eastern community and isolated two kinds of "influentials." "Local" influentials are oriented to local interests and problems, "cosmopolitan" influentials to the larger human community. He found that locals read newspapers more, but cosmopolitans read out-of-town prestige papers invariably. From among radio commentators, locals selected "personalizers" while cosmopolitans chose "analyzers."

The Janowitz (28) study of urban community newspapers looked into some *B*-message and *B*-channel relationships. This researcher constructed an "index of readership" based on (a) "exposure," or the amount of content read and (b) "involvement," or how important the reader feels the content is to him. This gave a four-point scale from "fans" (high exposure, intense involvement) to "nonreaders" (low or nonexposure, low or noninvolvement). The basic finding: community integration is related to community newspaper readership. Length of residence in the community, for example, was significantly associated with readership. So were participation in local voluntary groups and (even more so) frequency of church attendance. Readers tended to perceive their community newspapers as extensions of their personal and social contacts.

Studies of the *B*-message and *B*-channel variety are often in themselves intended to be systematic forms of fortuitous feedback. But investigations of feedback itself are rare. Analyses of fan mail or letters to the editor might be so classified. So might the study of researchers and what they do in relation to *A*, *B*, and *C* occupants. Forsythe (21) surveyed 44 persons who had, in 1946-

47, written a considerable number of letters to a Louisville newspaper which publishes virtually all the letters it gets. Compared with the distribution of adults in the community, letter writers tended to be older, more conservative, native white, better educated, long residents of the community, and predominantly white collar and professional males. Typical finding: four writers accounted for two-thirds of all drinking-gambling letters and another four wrote half the letters about organized labor. The letters were characteristically hotly contentious and "against."

We feel that much of the work in the *B*-channel area has been useful in giving us gross mappings of channel use and some notions of how people feel toward certain *C* institutions. Further study of the ways in which *B* occupants perceive channels as sources for need satisfaction and problem solution may prove fruitful; the Janowitz study appears to be a move in this direction.

On the basis of this review, a few observations about the condition of our knowledge of communication processes are possible. It seems to us that reseach in this area thus far has been characterized by (a) value orientation, (b) channel specificity, and (c) descriptive emphasis.

By value orientation we mean that the questions raised by many investigators have been predictable from knowledge of their assumptions and general attitudes, such as "for" and "against" the press or radio commercials or horror comics. We do not question the utility of careful research designed to answer questions of contemporary social significance. We do not believe, however, that knowledge about fundamental communication processes can be advanced by these means except more or less by accident. There are heartening exceptions, of course.

By channel specificity we refer to studies that attack communication problems in the context of a particular medium of communication. Again this is understandable from the viewpoint of "engineering" goals but of limited value in the development of a social science of communications.

What is meant by descriptive emphasis should be obvious. The systematic study of communication phenomena is relatively new. A large body of descriptive knowledge is probably a necessary first step in any field of research. We think this review demonstrates that such material abounds in the area of mass communication problems in the context of a particular medium of for the next step, which from our point of view is a shift from

assessment research to research based on and contributing to general theory.

SUMMARY

In these two articles we have proposed a schematic theoretical model for the study of communication, one which subsumes both face-to-face and mass communication but is intended as an orientation to a general theory of mass communication. In addition we have used the model as a framework for a review of a part of the literature of mass communication and have attempted a brief assessment of the present state of our knowledge of the field.

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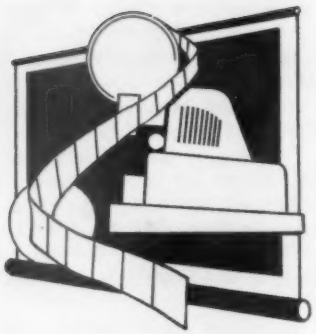

FILM

•ROBERT W. WAGNER

FILMS WITHOUT ENDINGS

All communication in some degree lends itself to variant interpretations. Even the most rigidly structured propaganda film is likely to be misunderstood, often with what have come to be known as "boomerang" effects. We know that responses to film may derive from status, socio-economic conditions, or other factors in the background of individual viewers. We know that film experience is dynamic, each member of the audience trying to put what he sees and hears into a familiar context, fitting the fragments into his own structure of things, trying to make sense of it the only way he can—in terms of his own perception of life.

A recent trend in the nontheatrical field is the production of films deliberately designed for a greater than usual degree of ambiguity through the presentation of "forked road" situations. Notable examples of this type are four productions by the Center for Mass Communication at Columbia University, and a fifth produced by Agrafilms for the National Education Association. These are film fragments—films without endings—intended to pose a problem, stimulate thought, and encourage discussion in the belief that an intelligent consideration of the issues will move the audience towards greater tolerance and understanding in matters such as academic freedom, racial equality, freedom of the press, and internationalism.

Freedom To Read[1] asks the question: "How can a library best serve the interests of the community?" It dramatizes a situa-

[1] A Columbia University Bicentenial film produced by the Center for Mass Communication of the Columbia University Press under a grant from the Fund for the Republic. Production Supervision: Erik Barnouw. Direction: Julian Roffman. Available from Center for Mass Communication, 1125 Amsterdam Ave., New York. Rental per day: $3 plus postage. Sale: $50

Robert Wagner is director of motion picture production at Ohio State University.

tion in which a Mr. Jones, representing a respectable community group, compiles a list of books which he considers "subversive." He argues that these books undermine our national security. He says it is illogical to try to defend freedom by allowing its principles to be assailed by writers of questionable loyalty.

The librarian, Mrs. Greene, insists that the right to read opinions on various sides of any public issue is part and parcel of the American tradition. Jefferson, Milton, Voltaire, and other writers in the democratic heritage are quoted. Mrs. Greene suggests that the matter be decided by the library board.

This 12½-minute presentation of the problem concludes with a screen title: "How can a library best serve our freedom?" The utilization manual suggests if the film is used on television, the title be dissolved over a live discussion panel in the studio. The discussion group then picks up the thread, analyzes, and presumably debates the issues presented by the film. Where it is used in schools, churches, or other film situations, the projector is to be turned off and the discussion, panel, or forum is to proceed.

Following the discussion, the second part of the film is presented. Part II runs only 1½ minutes, and is a restatement of the issue, summarized on the one hand by Mrs. Greene, and on the other by Mr. Jones, as they appear at the meeting of the library board. *You,* the audience, are the library board from that point on. The decision of the board is your decision. The ending of the film is what you make it—the lady or the tiger?

Rumor,[2] based on a story by Ben Kagan, is a case history of a rumor that started a race riot in Detroit. Like *Freedom To Read,* it is a two-part experience, with 6½ minutes of Part I presenting the problem, and Part II restating the problem more succinctly.

This is a cartoon-style film with drawings by Robert Osborn, showing how a minor automobile accident on a bridge snarled with traffic led to increasingly exaggerated reports of what happened as the story traveled by word of mouth, until Negroes and Whites found themselves involved in a racial conflict which had nothing to do with the facts of the original situation.

Which Way for Human Rights[3] is a description of some of the human hopes which rose from the carnage of World War II, and how these took form in the Universal Declaration of Human Rights of the United Nations.

The central question of the film is: "Are the affairs of all

[2] One of the Challenge film series produced by the Center for Mass Communication of the Columbia University Press, in cooperation with the Anti-Defamation League of B'nai B'rith. Script: Erik Barnouw. Supervision: Dorothy Oshlag. Narration: Gunnar Back. Available from the Center. Rental per day: $3 Sale: $40

[3] A Challenge film produced by the Center for Mass Communication of the Columbia University Press, in cooperation with the Anti-Defamation League of B'nai B'rith. Script: Erik Barnouw. Supervision: Dorothy Oshlag. Narration: Larry Lesueur. Available from the Center. Rental per day: $3 Sale: $40

men our affairs, whether we like it or not?" The issue is the interaction of local sovereignty and international responsibility, and the importance of the search for ways to secure for people all over the world the enjoyment of the human rights of life, liberty, and the pursuit of happiness.

This film is essentially an illustrated lecture. It is composed of a succession of still photographs which, despite the fact that they are panned, zoomed, and built up with a sound effects background, make the presentation a glorified sound filmstrip.

One of the Challenge series, it is designed in two parts. The first part states the problem, the second part, to be shown following the discussion, simply restates the issue at the same time reminding the audience that the problem has not been solved, and that it deserves further thought.

Can We Immunize Against Prejudice?[4] is a cartoon film done in a highly abstract manner, using isotype figures, stylized music, and sound effects. It expresses the separate points of view taken by three families about how to bring a child up in the world of tensions. Henry, a bank teller, believes in setting a good example for his child. George, an insurance salesman, gives his offspring the cold facts about race, creed, and color. Fred, who works at the courthouse as sergeant-at-arms, disciplines his child to get him to conform to social norms.

All three families are described as "sincere and hard working." Yet, all fail. In each case, the child comes home with antagonisms against minority groups. The question posed by Part I of this short, and perhaps somewhat over-produced film is: "How have these parents failed? We immunize our children against smallpox. But is there an antitoxin for prejudice?"

Like other films in the Challenge series, Part I ends with a screen title posing the question for discussion and indicating the point at which the projector is to be turned off for this purpose. Part II is a brief summary of the problem as the narrator, Eddie Albert, agrees: "No, we haven't solved the problem. Give it further thought, won't you?"

Freedom To Learn[5] is a one-part performance, and somewhat lengthier than the films previously described. The story begins when the parents of a 12th-grade student find the girl's notebook contains information on communism. As a result, the social studies

[4] Produced by the Center for Mass Communication, in cooperation with the Anti-Defamation League of B'nai B'rith. Script: Erik Barnouw, from a story by Ben Kagan. Supervision: Dorothy Oshlag. Director: Leo Lionni. Anomation Director: uth Kuss. Narration: Eddie Albert. Available from the Center. Rental per day: $8 Sale: $40

[5] *Freedom To Learn.* 28½ minutes. Produced by Agrafilms. Direction: Irving Rusinow. Distributed on rental basis by state education associations. Available for purchase from the National Education Association, 1201 Sixteenth St., N. W., Washington, D. C. Color: $170. Black and white: $75

teacher is called before the school board to answer the question: "Do you teach communism in your classroom?"

Her reply is that she teaches *about* communism, and that the teacher's job is not to tell her students what to think, but how to think. The father's complaint is: "Why does she have to teach all that controversial stuff? She's only stirring up trouble!"

After giving her testimony, the teacher wanders back to her deserted classroom. Here, in solitude, she makes her decision that whatever happens, she will not be the one to erase the freedom to learn from the slates of American school children. The decision of the school board is not revealed.

Each of these films present important, even crucial issues of our times in the form of a "forked-road" situation. Each is designed to sharpen the points of conflict, and to create an empathetic effect. A variety of production techniques found in this group of five films includes a highly abstract cartoon form, a conventional dramatic type, and a relatively static presentation. All are intended for use by discussion groups, or as a segment of a television panel or forum show, and therefore require intelligent utilization, and skillful integration with the larger experience of which they are a part.

Finally, each is a film without an ending, constructed to lend itself to the interplay of conflicting opinions. *Freedom To Learn* is not as loosely structured as some of the others, but *you* are the school board, just as in *Freedom To Read*, you are the library board; just as you must find the answers to *Which Way for Human Rights*, *Rumor*, and *Can We Immunize Against Prejudice?*

To the knowledge of the reviewer, very little reliable information has been collected on the impact of these five films. However, they raise a number of interesting problems for the student of communication, perhaps the most intriguing question being the range of variant interpretations which might result from tolerance material presented in this somewhat ambiguous motion picture form.

In this connection, it is interesting to recall Cooper and Jahoda's study in which the "Mr. Biggott" cartoons, which depicted *clear-cut cases* of prejudice, were misunderstood by approximately two-thirds of the group of white, non-Jewish males composing the test sample.[6]

Discussing the correlates of understanding in the Mr. Biggott cartoons, Kendall and Wolf deduce that:

> Because the cartoons portrayed bigots in such an uncomplimentary fashion, correct understanding carried with it a threat to the self-image of the prejudiced reader. He was therefore predisposed *not* to understand that the

[6] Cooper, Eunice, and Jahoda, Marie. "The Evasion of Propaganda: How Prejudiced People Respond to Antiprejudice Propaganda." *Journal of Psychology*, 33:15-25; 1947.

cartoons dealt with prejudices or that they ridiculed persons who held such attitudes. And, while it may not be immediately clear how a predisposition to misunderstand actually results in misunderstanding, our findings indicate that this relationship does exist, and that it is a close one.[7]

Fearing, referring to a study by Wilner on the effects of the film, *Home of the Brave*,[8] also makes some illuminating observations which may be helpful in assessing the possible impact of the group of films in this review. Discussing the role of existing attitudes as determinants in the perception of *Home of the Brave*, Fearing says:

> In particular, it was found that intentionally or unintentionally the film depicted certain characters and sequences in such a manner as to make them more or less permissive as regards interpretation. Where such permissiveness was possible, the interpretation was consistent with the degree of prejudice of the interpreters. In the light of these results it is possible to understand the reported box-office successes of this film in the South.
>
> These patterns of impact, sometimes called the "boomerang effect," may be interpreted psychologically as an attempt on the part of the interpreter to alter his cognitive frames of reference as little as possible when presented with conflicting stimulus material . . . . Because perception is selective, and because content, considered as stimulus material, is more or less ambiguous, this kind of distortion always occurs in some degree. In its simplest form the interpreter perceives the content in accordance with his predisposition, regardless of the character of the content as determined by independent criteria.[9]

There are differences, of course, between the Columbia University films and the Mr. Biggott cartoons. Mr. Biggott was represented as having cobwebs trailing from his head. There is no such satire in any of the films herein discussed. They each attempt to present something of both sides of an argument. Their sponsorship is known, while the authorship of the Biggott cartoons was anonymous. The films will be seen and discussed by a group of people, while the cartoons were viewed individually. If people see in these films the reflection of their own images, we shall have to analyze factors which were not present in the Kendall and Wolf study.

There can be little doubt, however, that some of the same factors will be at work. In some cases, what have been described as "evasion mechanisms" may go into action. When, as in the case of *Home of the Brave*, a well-balanced or permissive situation is presented, the audience may be expected to identify at least at first, with the side closest to their own beliefs. It may be neces-

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[7] Kendall, Patricia, and Wolf, Katherine. "The Analysis of Deviant Cases in Communications Research." *Communications Research, 1948-49*, edited by Lazarsfeld and Stanton. Harper and Brothers, New York, 1949. p. 162.

[8] *Home of the Brave*, depicting the dilemma of the American Negro, was voted one of the best 10 films produced in 1949. Released by United Artists. Producer: Stanley Kramer. Director: Mark Robson.

[9] Fearing, Franklin. "Social Impact of the Mass Media of Communication." *Mass Media in Education*, 53rd Yearbook of the National Society for the Study of Education, edited by Nelson B. Henry. University of Chicago Press, 1954. p. 189-90.

sary first to somehow break down this identification, if attitudes are to be shifted at all.

Films without endings merit study by the student of communication. They should also be of interest to the educator concerned with the thinking process, and to the documentary film maker, of whom Rotha says:

> His is a job of presenting one-half of the populace to the other; of bringing a deeper and more intelligent social analysis to bear upon the whole cross-section of modern society; exploring its weaknesses, reporting its events, dramatizing its experiences and suggesting a wider and more sympathetic understanding among the prevailing classes of society. He does not, I think, seek to draw conclusions but rather to make a statement of the case so that conclusions may be drawn.[10]

The real importance of films of this type, therefore, may be in their use as instruments for exploring the nature of our own predispositions, and our own insecurities. Unless so conceived, they may simply serve to reflect existing prejudices and misunderstandings, and to confirm or even strengthen the existing behavior patterns and attitudes of those who see them.

Intelligently used, films without endings may help us find out to what extent man can change, rise above his past performances, and prove himself capable of responding to something better than the echo of his own prejudices.

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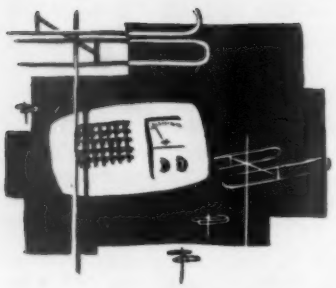
[10] Rotha, Paul. *Documentary Film*, Faber and Faber, London, 1952. p. 115.



TELEVISION

•DALLAS W. SMYTHE

COMMERCIAL TV PROGRAMING IN CHAMPAIGN-URBANA, 1955

A TV program inventory was made for the commercial station operating in Champaign-Urbana for the week of January 31-February 6, 1955, employing the same concepts and procedures as were used in the series of "monitoring studies" which I conducted for the NAEB and the Fund for Adult Education of the Ford Foundation between 1951 and 1953. The programs broadcast in this single-station community may be compared with that in another single-station community—New Haven, Connecticut—if allowance is made by the reader for the fact that the New Haven study was three years earlier (May 15-21, 1952). Programing in both of these communities may also be generally compared with that in New York.

The total program fare offered by the Champaign[1] station was 111 hours per week, as compared with 117 hours in New Haven and an average for seven New York stations in 1954 of 94 hours. Of the week's total, 74 percent consisted of entertainment-type programing in Champaign—virtually the same as the 73 percent in New Haven, and only slightly less than the 77 percent in New York in both 1954 and 1953. Information-type programing in Champaign was 19 percent of the weekly total, as compared with 21 percent in New Haven and 17 percent in New York in 1954. Orientation-type programs in Champaign were 7 percent of the total; in New Haven, 6 percent; and in New York in 1954, 5 percent.

The most abundant class of program in Champaign—as in all other TV programing studies—is drama. Forty percent of pro-

Dallas W. Smythe is research professor in the Institute of Communications Research and Professor of Economics at the University of Illinois.

[1] Civic pride may be hurt but for convenience we will assume that the "Urbana" is understood to be added to Champaign hereafter.

gram time was devoted to drama in Champaign. This was substantially more than appeared in the New Haven study (28 percent), but less than the 46 percent found in New York in 1954.

Possibly because of the fact that a single-station has its choice of programs from four networks, both Champaign and New Haven broadcast relatively more variety, quiz, stunts, and contest programs than the average in New York. Variety programs were the second largest class in Champaign (13 percent) and New Haven (19 percent). They also were the second largest class in New York, but with smaller volume (11 percent in 1954). Quiz, stunts, and contest programs provided almost as much time in Champaign (13 percent), and they were also a substantial class in New Haven (10 percent), though taking a subordinate place there to sports programs (11 percent). In New York, quiz, stunt, and contest programs were only 5 percent, being shaded slightly by music programs (7 percent) which were in third place in 1954. Sports events were relatively less abundant in Champaign (4 percent) than in New Haven and about the same as in New York (3 percent). The only other entertainment-type programs broadcast in Champaign were music (3 percent) and personalities (2 percent). These were approximately the same in New Haven (4 and 1 percent respectively). Personalities programs in New York were 5 percent. Traces of fine arts were present in New York programs in 1954 (0.2 percent) but totally absent in Champaign and New Haven.

Of the information-type programs, the largest class was news (general and sports) for both Champaign (8 percent) and New Haven as well as New York (8 percent). Next in volume in Champaign was general information (6 percent) to which we will return for later comment. In New Haven, domestic information was the second largest class (4 percent), as was also true of New York in 1954 (8 percent). The third largest class of information-type programing in Champaign was domestic information (4 percent), while in New Haven and New York it was general information (2 percent in both cases). Even though it is in an agricultural area, weather programs in Champaign were only 1 percent of total time; this despite the fact that they were relatively more abundant than in either New Haven or New York. Traces of information and instruction for children were observed in the New Haven study and in New York in earlier years, though not in 1954; none of this class was broadcast by the Champaign station.

Orientation-type programs, though small in aggregate, are spread over six distinguishable program classes. In Champaign, public issues, public events, public institutional (army, navy, and such), religion, and preschool entertainment each amounted to be-

tween 1 and 2 percent of total time with no significant differences between them. In New Haven, however, more than half of the orientation-type program time was contributed by public institutional programs (3 percent), with public issues and religion amounting to 1 percent each. In New York in 1954, public issues and religion fell just short of 2 percent apiece, with personal relations and public institutional fractionally below 1 percent each. No personal relations programs appeared in Champaign, though a trace of them was found in New Haven.

In our TV content analyses we have found it useful to distinguish between programs which, from their content and format, were apparently produced for very broad audience segments such as the predominantly child audience, predominantly housewife-plus-small-children audience ("domestic"), and the general audience composed of all age groups. On this basis the Champaign program structure was found to be significantly more aimed at the child audience (12 percent) than was true of New Haven (8 percent) or New York in 1953 (9 percent—the 1954 New York study did not employ these concepts). The reason for the difference lay in the greater quantity of children's drama which, in Champaign, constituted 9 percent of total program time, while in New Haven and New York it was less than half of that volume (4 percent in both cases). Children's variety programs were the second largest class of children's programs in all three cities (2 percent in Champaign and 3 percent in New Haven and New York). Small quantities of preschool entertainment and children's quiz, stunts, and contest programs were observed in Champaign and New York. Both New Haven and New York had traces of children's information and instruction programs, while none were noted in Champaign. New York had a trace of teen-age variety which was altogether absent in Champaign and New Haven.

Domestic program classes, as a group, were less abundant in both Champaign and New Haven (5 and 6 percent respectively) than in New York in 1953 (12 percent). Among these classes, cooking programs were the largest class in Champaign (2 percent), shopping and merchandising in New Haven (slightly above 2 percent), and domestic variety programs in New York (5 percent). Second largest among the domestic programs were shopping and merchandising programs in Champaign (fractionally below 2 percent), cooking in New Haven (2 percent) and in New York (3 percent). Domestic variety and housewives' music programs were each fractionally less than 1 percent in Champaign. In New Haven there was 1 percent domestic variety and a trace of housewives' music. The sole other domestic-group program class represented by only a trace in Champaign was arts, crafts,

and hobbies; the average New York station in 1953 carried five times the Champaign volume in this class, while none was observed in New Haven. Both New Haven and New York broadcast less than 1 percent of their total time in personal care programs, and similarly for personal relations programs. None of these classes appeared in the week monitored in Champaign.

When children's and domestic program classes are taken into account, it appears that 82 percent of the total program time in Champaign is devoted to programs aimed at the general audience, as compared to 87 percent in New Haven and 79 percent in New York in 1953.

It is now appropriate to return for a closer examination to that major share of all TV program time which falls under the heading of drama. In terms of presumptive audience, 31 percent of Champaign program time was devoted to drama aimed at the general audience, with 9 percent in children's drama. Both of these were larger than in New Haven (where they were 24 and 4 percent respectively). Champaign's general-audience drama was less than, but its children's drama was larger than, in New York (where they were 43 and 4 percent respectively). When we look to the substantive classes of drama, we find that the most abundant was crime drama, which in both Champaign and New Haven aggregated 9 percent, and in New York in 1954 was 14 percent. Only fractionally smaller in Champaign was the second largest drama class, domestic serial (sometimes uncharitably referred to as "soap opera"), with 9 percent; this class was also second in size in New Haven (with 5 percent). The second largest class of drama in New York was comedy (11 percent). Comedy drama was third in Champaign (8 percent), with romance in third place in New Haven (4 percent), and western in New York in 1954 (with 7 percent). Western drama stood in fourth place in Champaign (with 7 percent), comedy in New Haven (4 percent), and action in New York (5 percent). None of the remaining classes of drama found in Champaign contained more than 3 percent of total time. They were romance (3 percent), domestic drama other than serial (3 percent), and children's adventure and historical (1 percent). In New Haven, minor drama classes included classics (1 percent), children's adventure and historical (1 percent), with traces in musical drama, other drama, and children's adventure and historical. In New York in 1954 the minor classes were romance (2 percent), musical (1 percent), domestic serial (1 percent), domestic other than serial (1 percent), fairy tales (1 percent), and other (3 percent), with a trace of the classics.

Content analyses using gross categories such as those employed in this series of TV studies are far removed from "effect"

studies; indeed care was taken in them to restrict the appraisal process to characteristics which would serve to place programs in one or another category depending upon the content, form, and ostensible audience of the programs. By grouping program classes according to their predominant content (i.e. entertainment, information, or orientation), it was hoped to facilitate significant appraisals for a variety of social purposes. Needless to say, in so grouping the programs there was implicit recognition that programs classed in the entertainment-type group might well have significant informational and orientational aspects, and so on.

While it is certainly no guarantee that a program will have "educational" effects, identification of a television program as being created by an educational institution has interest for many public policy purposes. We therefore observed the number of programs identified with such institutions and in the Champaign study found five programs, part of a series produced by the University of Illinois. All of the five were in the early afternoon hours, and together they comprise 75 minutes, or 1 percent of the week's total program time. This showing compares with no programs identified with educational institutions in the New Haven study-week, and 19 observed on the seven New York stations in 1954—or an average of less than three per station—where they totalled 1 percent of program time. Of the five programs—each 15 minutes long—in the Champaign week, one was in the entertainment-type program classes. This was a program of serious music (a Bach piano recital from the school of music). Three of the five programs were classified in the information-type program group. Of these, two were in general information—both of them pertaining to applied physical science. One was a college of agriculture program containing a discussion of new uses for agricultural products. The other was a demonstration and discussion of new textiles, fibres, and their uses from the department of Home Economics. The third of the information-type programs was classified as domestic information under the heading of arts, crafts, and hobbies. It was "Hobby Shop" with a demonstration of Egyptian cord weaving by a professor from the College of Fine and Applied Arts. The fifth program identified with an educational institution was placed in the orientation-type program group and classified as public issues. This was a debate-type program with a moderator where the "pros and cons" of a bill introduced in the state legislature relating to the NCAA football television plan for 1955 were discussed. In a short article of this sort it is obviously unfeasible to detail all the programs which were classified even in the extremely interesting category of information (general). Suffice it to say that under that heading we placed as science the instal-

ment of "Adventure"—a natural history study of amphibious life. Under another subclass, travel, we placed "Santiago de Cuba"—a film about a trip through this city—and "Know Your Neighbors" —a program about Watseka, Illinois. Under the subclass, applied physical science we place "The Search"—about exploration for uranium in Colorado, "Medic"—the installment dealing with hemophilia,[1] the University of Illinois programs mentioned above, and three films about industries. Under the subclass applied social science we placed the 90 minute biographical drama of the life of Abraham Lincoln on "Omnibus," "What in the World?"—concerning archeological objects to be identified by a panel of experts—"You Are There"—an historical drama concerning the signing of

TABLE I — COMPARISON OF CHAMPAIGN-URBANA, ONE NEW HAVEN, THREE NEW YORK, ONE LOS ANGELES, AND ONE CHICAGO ANALYSES OF TELEVISION PROGRAMING [1]

Program Class	Champaign-Urbana[2] 1955	New Haven[3] 1952	New York 1953[4]	New York 1952[5]	New York 1951[6]	Los Angeles[7] 1951	Chicago[8] 1951
News	6.6	12.6	6.6	5.9	5.5	12.2	5.0
Weather	1.3	0.4	0.5	0.4	0.4	0.6	0.7
Public issues	1.1	1.4	1.5	1.9	1.4	1.1	1.8
Public events	1.5	0	0	1.4	0.9	0.1	0
Public (institutional)	1.4	3.4	1.2	1.6	1.1	1.6	1.6
Information (general)	6.0	2.2	2.3	2.9	3.3	2.6	2.0
Religion	1.2	0.8	1.7	1.0	0.7	0.6	0.1
Drama (general)	31.3	24.3	43.1	35.7	25.4	25.6	26.2
Dance	0	0	0.1	0	0.1	0	0
Music	2.2	3.9	2.2	4.2	3.6	6.1	3.0
Fine arts	0	0	0.3	0.1	0.1	0	0.3
Variety	10.6	15.1	3.5	6.2	13.6	9.7	8.8
Personalities	1.5	1.1	2.7	2.3	4.2	2.0	7.6
Quiz, stunts, and contests	12.6	10.1	5.2	6.3	6.9	6.2	6.6
Sports	4.9	11.3	6.8	8.4	10.1	5.4	20.9
Domestic	5.4	5.9	13.1	10.9	10.2	16.4	7.2
Children's programs	12.4	7.5	9.2	11.0	12.5	10.3	8.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Data for New York, 1954 not comparable.
[2] January 31-February 6, 1955.
[3] May 15-21, 1952.
[4] January 4-10, 1953.
[5] January 4-10, 1952.
[6] January 4-10, 1951.
[7] May 23-29, 1951.
[8] July 30-August 5, 1951.

[1] Classification of "Medic" as an information (general) class of program rather than as some form of drama was based on the apparent fact that the dramatic format serves to heighten interest in the informational content of the program. Tony Minor uses characters who are developed only in sufficient detail to accomplish this end. Which is to say that the informational content rather than dramatic character development is the center of focus in the program.

of the Declaration of Independence—and "Cavalcade of America" —an historical drama about the first woman doctor in America.

Many other interesting analyses are possible with the information from these studies. Of particular interest would be an examination of the differences in the composition of the programing available during the several conventionally distinguished time segments into which the week may be divided (the adult-hours, children-hours, and the like), and especially of the distribution in those segments of programs aimed at particular audiences. These and other detailed analyses must be postponed at this time.

By way of conclusion we have compiled a comparative table which shows the results of the various TV monitoring studies to date insofar as it is possible to develop comparable data. Readers of the present article who are unfamiliar with the concepts or procedures employed in the Champaign study will find them explained fully in Chapter XII of *Three Years of New York Television* which, like other reports summarized in Table I, is available from the National Association of Educational Broadcasters, Gregory Hall, University of Illinois.

BOOK REVIEWS

DEPARTMENT OF AUDIO-VISUAL INSTRUCTION, NATIONAL EDUCATION ASSOCIATION. *The School Administrator and His Audio-Visual Program.* Charles F. Schuller, editor. Washington, D. C.: the Association, 1954. 367 p.

Reviewed by

•AMO DE BERNARDIS

The publication of *The School Administrator and His Audio-Visual Program* fills a real need in the rapidly growing field of audio-visual aids. Many books have been published which discuss one phase or another of this subject, but little has been done to bring together into one volume the administrative problems, the teaching techniques, and the essential standards of an effective audio-visual program. Although the primary purpose was to address the volume to the school administrator, all persons directly responsible for an audio-visual program will find here a wealth of suggestions. The persons who worked on the volume were selected because of their wide and varied experience in the field.

A short review cannot do justice to the contents of this book. We must be content with a few highlights.

The first section of the Yearbook deals with ways and means by which audio-visual aids can help vitalize the curriculum, what steps should be taken to initiate the program, and what services are common to audio-visual departments. The reader will find exceptionally profitable the chapter on administration of an audio-visual center, not only because of the text, but also because of the many fine illustrations. However, a few more illustrations from small school systems would have been very welcome, since most of our profession work in villages and towns where problems of supply and use are most urgent.

Amo De Bernardis is assistant superintendent, Portland Public Schools, Portland, Oregon.

The large number of schoolrooms now under construction, and the many classrooms to be built in the future make it necessary that the architect meet the needs of the present day and of the future as well. Chapter IV points out the facilities necessary in a classroom for optimum use of audio-visual materials, and suggestions are given on how selection of equipment may be handled.

Any program to be successful must have well-trained personnel, both on the administrative and the classroom level. Chapter VI discusses the selection of personnel to direct the audio-visual department, while Chapter VIII takes up the problem of inservice teacher training. Many excellent ideas are given for helping teachers to make effective use of audio-visual aids.

If teachers are to use instructional materials in the classroom, these must be readily available. The teacher cannot be expected to spend any great portion of his free time tracking down the aids necessary for his work. Procurement, distribution, and circulation are important aspects of any audio-visual program. Chapter IX contains many suggestions on how this can be done. It offers many examples of forms, catalogs, bulletins, and the like, all of which should prove helpful. Audio-visual material must be an integral part of the teaching and learning process if it is to be effective. It must be considered as fundamental as the textbook. Perhaps even more so, since many parts of the average textbook cannot be completely understood without some audio-visual background.

For organizing and operating audio-visual programs in harmony with sound audio-visual principles and practices, Chapter VII does an excellent job. The writers of this section have struck at the heart of the reason for providing materials services and the why and how of making items available.

One phase of the subject is worthy of a more extensive and detailed treatment than the book provides, and this is the financial one. The narrative presentation is interesting, but more examples of budgets and how they are organized should have been included. Providing the necessary budget for audio-visual services is the life blood of the program.

The section dealing with trends and undeveloped areas discussed such problems as teacher education, teaching materials centers, and the impact of television on teaching and learning. Something more could have been said on the advantage of coordinating all materials services for a school system into a single center. An instructional materials center is a vast tool chest for the teacher. One well-organized trip should secure for her the technical advice she needs, and set in motion a program of delivery for such materials as she has chosen, which will bring her just the book or map or film or slide or recorder or projector she needs at the time she

needs it. Only a well-integrated center can perform this task with real economy of money and time, and real service to the classroom.

Every modern curriculum leans heavily on a variety of instructional aids. It is the duty of the administrator to make this possible and the book reviewed on this page can help him do it. This book should prove very helpful to all those concerned with the audio-visual program. The many fine illustrations, examples, and suggestions should help anyone to do a better job of providing the teacher with audio-visual materials.

NICHENHAUSER, ADOLPH, M.D.; COLEMAN, MARIE L.; and RUHE, DAVID S., M.D. *Films in Psychiatry, Psychology and Mental Health.* New York: Health Education Council, 1953. 269 p. (Published under the auspices of Medical Audio-Visual Institute of the Association of American Medical Colleges.)

Reviewed by

B. S. BLOOM

This book has several short chapters on the relation between content and presentation in films, the use of motion pictures for the teaching of psychiatry, and a brief history of motion pictures in relation to neurology, psychiatry, psychology, and mental health education. However, its primary emphasis and value are in the careful reviews of representative films in psychiatry, psychology, and mental health.

These reviews appear to be models of how a film should be analyzed for educational purposes. The authors briefly describe the procedures used in preparing the film reviews. "The film in question was, after a preliminary screening, assigned to a reviewer who studied it, prepared the content description and formulated his own observations and comments as well as the points needing further investigation by himself or in discussion at subsequent screenings. Then a number of subject-matter specialists and teachers of the subject—a specialist panel—were selected; they saw the film and discussed it under the guidance of the reviewer." Where desirable and feasible more than one such screening was held with different audience groups. The discussions, notes, and comments of individuals and groups provided the basis for the appraisal and utilization sections of the critical reviews.

Each review consists of five parts which are handled in a consistent fashion throughout the book. The first part is a brief abstract and characterization of the film. This part deals briefly with

B. S. Bloom is Professor of Education, University of Chicago.

subject matter of the film, the techniques used to produce it, the special values of the film for educational purposes, and an exceedingly brief and general evaluation of the film. A second part of each review lists the educational audience for which the film can be used, the production data, and the necessary information about its distribution.

The third part is a relatively complete description of the content. This is sufficiently detailed to give the potential user an adequate conception of what the film contains and how he may relate it to his instruction.

A fourth part of the review is an appraisal of the content, presentation, and effectiveness of the film. The appraisal of content deals with the validity of content from the viewpoint of psychological theory, the complexity of the content, and the relevance and significance of particular parts of the content. The appraisal of presentation is concerned with the credibility of the story, the value of particular dramatic and other techniques, the quality of the picture, and other technical qualities of the film. The appraisal of effectiveness attempts to answer the questions, "What can be learned from the film?" "Who can learn it?" and "How well can one learn from it?"

The fifth and final part of the review considers the way in which the film can be utilized. This section discusses the groups for which the film can be used, and the purposes it can serve for these groups. It also points out the audiences for which the film would be misleading or even destructive. This section considers the need for a discussion leader with various groups, or the general context and conditions under which the film can be utilized. It also includes references to study guides and accompanying materials, if available.

Perhaps the scope and values of this type of review can best be appreciated by reading the book itself. In no other publication has this reviewer found material on films in psychiatry, psychology, and mental health, which is comparable in scope or in refinement of the analytical techniques employed.

Increasingly, films are seen as tools in learning, rather than as audio-visual aids. The distinction between an *aid* and a *tool* may seem a fine, and not very important one, but it has to do with the centrality of the film in the learning process. A teacher may use film aids to help in the learning process just as he may use a great many other aids. The aid is supplemental and helpful, but the loss is not too great if "aids" are not available or if they are not utilized. *A tool is quite another thing. If a task is to be performed there may be several tools which can be used, but there is usually one tool which is better adapted to the function than others. A tool is neces-*

sary to perform the task and it is important to use the right tool in the right way. There are learning experiences where the proper tool is a film and where the film must be used in the proper way.

To proceed with the analogy, there are learning experiences where the film is the only tool which can properly be used. For this, the teacher must have a clear conception of the learning task, a detailed understanding of the particular film he wishes to use as the learning tool, and a well thought out plan of just how the film will be used in relation to the other learning experiences of the students. The present book serves admirably to give the teacher the information necessary for the last two of the above.

As a tool in learning, the film can provide learning experiences which cannot be efficiently accomplished in any other way. Perhaps the most obvious one is that of collecting material over a long span of time (more years than the student spends in a particular program), and presenting it in such a sequence that the processes involved and the changes taking place in the phenomena can be seen most clearly. Thus, the film is a time-binding tool. Two good examples of such films are "Anna N" and "A Psychoneurosis with Compulsive Trends in the Making." Both of these summarize a 15-year period in the history of an individual. The film can also be a space-binding tool in that it collects phenomena widely dispersed in space and puts them together for comparison, contrast, and relationships which would otherwise be lost. Examples of such films are "Quiet One" (Harlem), "Palmour Street" (A Southern Negro neighborhood), and "Let There Be Light" (A psychiatric army hospital). The film also can be a tool for revealing delicate nuances in a phenomenon which can only be seen as the result of repeated experience with a particular phenomenon which would otherwise be too transitory and ephemeral for this insight. Examples of such films are "Activity Group Therapy," "The Embryology of Human Behavior," and "Grief: A Peril in Infancy." And, finally, the film can be a record of the rare, the model, and the repeated sample of phenomena which would otherwise be too difficult to secure or too uneconomical to present to each new group of learners. Examples are "Hypnotic Behavior," "Mental Symptoms," and "Unconscious Motivation."

It is interesting to note that of the 42 films reviewed in detail in this work, approximately two-thirds of them could really serve as major learning tools for the appropriate audience or group. This speaks well for the selection made by the authors of this book and indicates to this reviewer, at least, that film makers are increasingly becoming aware of the appropriate function of films in the broad areas of psychology and psychiatry.

RESEARCH ABSTRACTS

TELEVISION

ANDERSON GEORGE R., and VANDERMEER ABRAM W. "A Comparative Study of the Effectiveness of Lessons on the Slide Rule Presented via Television and in Person." *The Mathematics Teacher* 47: 323-27; May 1954.

Purpose: To determine the relative effectiveness with which television could be used to present a unit of work on the slide rule in high-school mathematics classrooms.

Procedure: Five classes of high-school sophomores ranging in number from 22 to 26 constituted the experimental populations. The content of the experimental instruction concerned certain computational skills on the slide rule which were presented in six half-hour programs over a six-weeks period. Three classes were taught via television by the senior author and the two other classes were taught "in person" by the same author. On the basis of test scores on the California Test of Mental Maturity, Advanced Series, and the Stanford Achievement Test in Advanced Arithmetic, Form E, two matched groups of 41 students each were selected. The groups taught by television viewed the presentation in their regular classrooms on the same days that the control groups were taught "in person" by the author. A five question test was administered to both groups after each lesson, and a 25 item final test comprising the five short tests were readministered after the last instructional session.

Results: 1. Teaching the slide rule via television seemed to be practically as effective as teaching it in person, since there was only a small, statistically insignificant difference in the final mean scores in favor of the group taught "in person."

2. No significant differences were found when the data were further analyzed to determine whether differences would show up when the experimental groups were divided according to sex and according to intelligence test scores.

3. All groups revealed an unsatisfactory degree of learning as evidenced by the fact that none of the observed groups or subgroups scored as high as 50 percent, on the average, on the final examination.

4. It appeared that the groups taught by television forgot what they learned more readily than groups taught in person. The difference between

mean weekly test score and final test score was highly significant (C.R. 3.25) for the television group, but not for the inservice group (C.R. 0.88).—*John Moldstad.*

LANG, KURT, and LANG, GLADYS ENGEL. "The Unique Perspective of Television and Its Effect: A Pilot Study." *American Sociological Review* 18: 3-12; February 1953.

Purpose: To investigate a public event as seen by video viewers and as actually experienced by spectators present at the event; to analyze any differences in these two perspectives as a starting point for the assessment of a particular effect of television in structuring public events.

Procedure: Thirty-one trained observers were posted so as to be able to obtain maximum coverage of the entire Chicago MacArthur Day Parade either through direct observation or via television. Each participant observer and each video monitor carefully recorded all observations and impressions. A content analysis comparing the two versions provided a method of studying how the event was received and interpreted.

Results: The authors conclude:

1. In examining a public event, there may be considerable discrepancy between perspectives gained through direct observation at the scene of the event and those received through televiewing.

2. The differing characterisics of the television version may be attributed to (a) "technological bias," i.e., the necessary arbitrary sequence of telecasting events and the choices by television personnel of what is important; (b) structuring of an event by the announcer who, through his commentary, helps the spectator gain a stable orientation from one particular perspective; and (c) reciprocal effects, which modify the event itself by staging it in a way which makes it more suitable for telecasting and creates among the actors the consciousness of acting for a larger audience.

3. Television may tend to depict public events in unifying rather than in particularistic symbols, thus leaving little room for dissent and resulting in a perspective which over-extends immediate reality.

4. Television tends to enlarge the field of vision of the viewer while, at the same time, obscuring the context in which these events could be interpreted. —*John Moldstad.*

WITTY, PAUL. "Children and TV—A Fifth Report." *Elementary English* 31: 349-57; October 1954.

Purpose: To present the results of the fifth yearly study of the amount of time devoted to TV, and programs preferred by elementary- and secondary-school pupils, their parents, and their teachers; to compare results of this study with the four earlier investigations.

Procedure and Results: Television habits and preferences of 1500 elementary and 400 secondary students from Chicago and Evanston schools were secured through a questionnaire. Some of the results and comparisons included: (a) Amount of ownership of TV sets has shown a steady increase. In 1950, 43 percent of the pupils had TV sets at home; in 1954, the percent was 96. In 1951, only 25 percent of the teachers watched TV; in 1954, 83 percent of the teachers owned sets. (b) Average time spent by elementary students in watch-

ing TV has fluctuated betwen 19 and 23 hours per week during the last five years, 1950-1954. (c) Average time spent watching TV by high-school pupils has decreased from 17 hours per week in 1953 to about 14 hours per week for 1954. (d) Parents spent an average of 16.3 hours per week and teachers 11.5 hours per week with television. (e) Program preferences have changed appreciably for all groups. In 1954, elementary-school pupils liked these programs best: *I Love Lucy, Dragnet, My Little Margie, Roy Rogers, Topper,* and *Superman.* The 1954 preferences of high-school students included: *I Love Lucy, Dragnet, I Led Three Lives, This Is Your Life, Colgate Comedy Hour, Jackie Gleason,* and *Liberace.* The teachers' preference in 1954 were: *What's My Line? Kraft TV theater, Fred Waring Show, Person to Person,* and *Omnibus.* (f) In 1954, *Howdy Doody, News,* and *Captain Video* topped the children's list of disliked programs while parents and teachers expressed a common dislike for *Westerns, Wrestling,* and *Milton Berle.* (g) Both parents and teachers suggested that more programs be devoted to education, drama, history, travel, music, and current events. (h) In 1954, 39 percent of the parents and 29 percent of the teachers stated that pupils read less. (i) The teachers concluded that an appraisal of the desirability or undesirablity of televiewing could be ascertained only by a complete case study of each child.—*John Moldstad.*

FILM

LASSER, S. "The Impact of Visual Aid Displays Showing a Manipulative Task." *The Quarterly Journal of Experimental Psychology* 6: Part 3, 95-106; August 1954.

Purpose: To test the effectiveness of a film versus a filmstrip in teaching a simple performance task of repairing a broken sash cord in a window.

Procedure: The subjects were 12 university students and 63 members of the RAF. Only 13 RAF men saw the filmstrip. The film was commercially produced, but the filmstrip was especially produced for the experiment. These are the "Visual Aid Displays" referred to in the title. The commentary was identical for both. There was no other instruction. Responses on the 23 suboperations of the performance task used as the test of learning were classified into seven categories: correct response, major error, minor error, prompt, correct response but out of serial order, omission, and importation. Since a major error necessitated a prompt from the tester, these two were the same.

Results: No significant difference was found between the average performance of the film and of the filmstrip groups. However, graphical analysis of the 23 suboperations showed one particular step where the film group did very much better than the filmstrip group, presumably because the film had continuity. The graphs of both groups showed very poor performance on certain operations, showing that both media failed to communicate to the learners. The author theorizes from the subjects' comments that the film and filmstrip presentations are not stored as memory-images, nor can they furnish ready-made meanings even though fragmentary imagery did occur during the performance task. As a psychologist he proposes further research to investigate how learning from the visual perception becomes available to the learner during subsequent performance.—*Paul Wendt.*

PHOTOGRAPHS

GRAHAM, MILTON D. "The Effectiveness of Photographs as a Projective Device in an International Attitudes Survey: Responses of 680 Britons to 10 Photographs of American Types." *Journal of Social Psychology* **40: 93-120; August 1954.**

Purpose: To determine the effectiveness of photographs in an international attitudes survey in eliciting free and unstructured responses (a) that contribute materially to the analysis of the attitude complex, and (b) that can be checked by empirical data.

Procedure: Ten photographs from the files of the US Information Agency in London were shown to 680 Britons who were asked to identify the "American types" and state why they chose the ones they did. About one-third of the questionnaires were completed under proctors, one-third to be returned by mail were handed out at organizational meetings, one-third were mailed to every tenth person on the national panel of a professional polling agency.

Results:

The picture.	*No. of times chosen, as representing an "American Type."*
Texas county sheriff	526
Midwest school executive	482
Air Force mechanic	474
Negro skilled TVA worker	358
Maine French-Canadian family	231
NY high-school students	196
Middle-age Red Cross volunteer	186
Elderly Texan couple at rodeo	171
Midwest farmwife	100
Connecticut Kosher poultry farmer	42

Most subjects felt that "American types" decidedly did exist although there were some dissidents. Items of dress and "a well-fed look" seemed to be the most important clues. These and other reasons were traced to their origin in media of communication past and present.

Conclusions: The author concludes that photographs are an excellent device in stimulating initial interest in a questionnaire, to use to break up the solid verbal appearance of a questionnaire, for eliciting free responses. They were effective as a projective device since the free responses yielded much valuable data about the respondents and their attitudes toward America. —*Paul Wendt.*

COMIC STRIPS

AUSTER, DONALD, "A Content Analysis of 'Little Orphan Annie.'" *Social Problems* **2:26-33; July 1954.**

Purpose: To determine the nature and extent to which a measurable social, political, and economic ideology exists in a nationally syndicated comic strip.

Procedure: Four areas were selected for study: (a) justice, (b) social class, (c) business success, and (d) political ideology. Hypotheses relative to the probable comic strip content in these areas were formulated. They were

investigated by means of a content analysis of a representative sample of the comic strip taken from the universe of 25 years of its existence. A total of 1623 separate comic strip panels were analyzed for their theme and symbol content. Findings were checked by two independent judges. Agreement between the author and both judges ranged from a minimum of 75.5 percent in some areas to 91.8 percent in others.

Findings: Some of the hypotheses confirmed were: (a) American Justice —justice and the legal process are portrayed as unwieldly and corrupt, consequently it is necessary for extralegal substitutes to be employed; (b) Social Class—the working class is inadequately and unfavorably portrayed as compared with the middle class; (c) Business Success—the comic strip frequently mentions the Horatio Alger legend as the basis for success; however, actual success frequently results from luck rather than hard work. After analyzing the significance of these findings, the author points to the need for further study of the comic strips as important communicators of attitudes, values, and particular points of view.—*John Molstad.*

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